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Catalogue of the described TENTHREDINIDÆ and UROCERIDÆ of North America.

BY EDWARD NORTON.

[Communicated March 11th, 1867.]

This paper is not presented as a complete monograph of these Families, but simply as a catalogue of the genera and species of this continent, with references to all the described genera known to the compiler, for the information of American students who have not access to the original descriptions.

It is to be hoped that it will lead to a closer and wider study of these the most injurious of all Hymenoptera to our trees and plants. As all of their larvæ live on leaves or woody fiber they may all be classed as injurious to vegetation.

In some genera it is very difficult to define a true species, because of the variation in color. This is particularly the case in *Nematus* and in *Tenthredo*. And doubtless some of the species described here, will prove to be varieties. Mr. Walsh has shown that in some species of *Euura* and *Nematus* bred by him, it was almost impossible to detect any difference in the imago, while the larvæ varied greatly. Doubtless our present opinion will be greatly modified by future discoveries. The bullæ which appear in the wing nervures of all these insects, and which are much noticed by Mr. Walsh, are only referred to in this work, because they have not been sufficiently studied by the writer. Although not *caused* by the folding and unfolding of the wings, they seem to indicate the points at which the wings are folded or unfolded, and the hinges at which they can be bent without breaking. As the same arrangement is often common to several genera, it seems probable they may prove of value in defining Tribes or groups of genera; a most desirable point, as will be seen in the deficiency of many of the generic distinctions hereafter presented.

It is fitting to acknowledge with thanks, the receipt of insects for examination from many persons, especially the following: A. S. Packard, Jr., from Maine and Labrador; S. H. Scudder and A. F. Sanborn, from Massachusetts; J. Akhurst, W. H. Edwards and Mr. Calverley, New York and Virginia; P. R. Uhler and T. Glover, from Maryland; Baron Osten Sacken, District of Columbia and elsewhere. Thanks are also due to Prof. Agassiz for affording free access to collections in the Cambridge Museum; S. H. Scudder to the collection of Dr. Harris, in the Bost. Soc. Nat. Hist.; E. T. Cresson, to the collection of the

American Entomological Society, and in giving most ready and valuable information from rare books, only to be found there. Through the Smithsonian Institute, beside others, insects have been received from the following western localities: from the Hudson's Bay Territory and Russian America, collected by Robt. Kennicott; from Washington Territory and Puget's Sound, by Dr. C. B. Kennerley; N. W. Boundary Survey, Lieut. G. Beckwith, U. S. A.; Pacific R. R. Survey, near 38° N. L.; St. Louis, Mo., Dr. Engelmann; Mexico, Dr. H. DeSaussure; also others mentioned in the course of the manuscript.

A list of the described species of South America is added, which may be useful at some future time.

SYNOPSIS OF THE ORDER.

Order **HYMENOPTERA**, Linn.

Section I. Terebrantia, *Latr.*		
Sub-Section 1. *Phytiphaga.*		
Division 1. Serrifera.		1. **Tenthredinidæ.**
2. Terebellifera.		2. **Uroceridæ.**
2. *Entomophaga.*		
1. Spiculifera.		3. **Cynipidæ.**
		4. **Evaniadæ.**
		5. **Ichneumonidæ.**
		6. **Chalcididæ.**
		7. **Proctotrupidæ.**
2. Tubulifera.		8. **Chrysididæ.**
Section II. Aculeata, *Latr.*		
Sub-Section 1. *Prædones.*		
1. Heterogyna.		9. **Formicidæ.**
		10. **Mutillidæ.**
2. Fossores.		11. **Scoliadæ.**
		12. **Pompilidæ.**
		13. **Sphegidæ.**
		14. **Larridæ.**
		15. **Bembicidæ.**
		16. **Nyssonidæ.**
		17. **Crabronidæ.**
3. Diploptera.		18. **Vespidæ.**
	1. Solitary	1. MASARINI.
		2. EUMENINI.
	2. Social.	3. VESPINI.
2. *Mellifera*, Latr.—*Anthophila.*		
		19. **Andrenidæ.**
		20. **Apidæ.**

Order HYMENOPTERA, Linn.

Characters.—Wings four; naked, membranous, the posterior pair smaller than the anterior, with comparatively few veins.

Mouth with horny jaws, and with a lower lip or tongue, sheathed by the maxillæ.

Tarsi generally five jointed.

Abdomen armed with a multivalve saw ovipositor or sting in the females.

Larva apod and vermiform (or cruciform and pedate in one group.)

Pupa incomplete and inactive.

Section I. *Terebrantia*, Latreille.

The abdomen of the females furnished with an instrument used as a saw or borer for depositing the eggs.

Sub-Section I. *Phytiphaga.*

Abdomen sessile, or soldered in its full width to the base of the thorax.

Group *a.* *Serrifera.*—*Tenthredinidæ.*

Abdomen of female armed with saws. Anterior tibiæ with two apical spurs.

Group *b.* *Terebellifera*—*Uroceridæ.*

Abdomen of female armed with a borer. Anterior tibiæ with one apical spur.

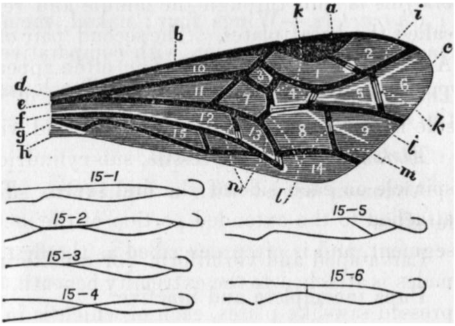
Family TENTHREDINIDÆ, Leach.

Antennæ.—The form and number of articulations or joints serves to indicate the principal divisions of the family.

Head.—Eyes large, in general widely separated. Ocelli three. Labrum transverse or quadrate, pilose. Mandibles terminated with teeth, often unequal on opposite sides. Labium with three laminæ; labial palpi 4-jointed; maxillary palpi 6-jointed.

Wings.—The divisions of the genera and sub-genera are generally indicated by the number, form and position of the areolets. The marginal areolets are complete.

UPPER WING.



a. Stigma.
b. Costa or costal margin.
c. Apical margin.
d. Costal and post costal veins.
e. Externo medial.
f, g. Anal.
h. Posterior margin.
i. Marginal vein.
j. Submarginal vein.
k. First, second and third (transverse) submarginal nervures.
l. Recurrent nervures (discoidal.)
m. Discoidal vein.
n. First and second inner apical or submarginal nervures.
Bullæ or clear spots on the veins or nervures, with bullar or clear lines crossing them.
1. 2. Marginal or radial cells.
3, 4, 5, 6. Submarginal or cubital cells.
7. 8, 9. Discoidal cells.
10. Costal cell.
11, 12. Brachial or medial cells.
13, 14. Inner and outer apical cells. (Hinder cells, *Hartig.* Cellule du limbe, *Lepel.*)
No. 11 is sometimes the medial, and Nos. 12 and 13 the submedial cells. Nos. 9 and 14 the apical cells; Nos. 7 and 13 discoidal; Nos. 10, 11, 12, 15, the 1st, 2d, 3d, and 4th brachial cells.
15. Lanceolate cell.—1. Open.
2. Contracted.
3. Petiolate.
4. Sub-contracted.
5. With oblique cross nervure.
6. With straight cross nervure.

Thorax.—This is generally wider than the head. The prothorax is its anterior part, its upper edge or collar curving and joining wings; the angular space nearest the wings is called the anterior angle, back of which, next the pleura, is the first spiracle. The mesothorax is between the wings above, and is divided into three lobes, with deep sutures between. Properly connected with this, between this and the metathorax is the scutellum, which is generally small, elevated and rounded or conical. Behind this is the post-scutellum, at the sides of which are usually two minute white dots (cenchri). The metathorax is the hinder part of the thorax, and has attached to it the hinder pair of wings and the two hinder legs. The posterior portion of the metathorax is often divided by a suture from the anterior part, and covers what is often supposed to be the first abdominal segment. In most genera this is split through the middle and retracted, and hence has been called the basal plates. The second pair of spiracles is on these plates. A pale membrane, as in *Cimbex*, often appears between the basal plates. The pectus is the breast or under part of the thorax. The pleura or side is the space between the pectus and wings.

Abdomen.—This is sessile, sub-cylindric; segments distinct, with a spiracle on each side of the first seven. The first or basal segment is attached to the extended portion of the metathorax, which resembles a segment, and is often described as the first.* The ovipositor of the females is attached to the extremity beneath. It consists of a pair of compressed saw-like plates, each of which is in two pieces, the saw and its back support which is also serrate. These saws vary in shape in different genera, but are curved upward, serrate and ribbed on the sides. They are inclosed in a pair of outer sheaths.

Legs.—Length moderate. Trochanters 2-jointed. The ends of the tibiæ with two acute spines. In some genera there are one or more spines on the sides of the tibiæ. The four basal joints of the tarsi generally have a membranous appendage beneath.

Pupa.—A soft chrysalis, when mature distinctly exhibiting eyes, antennæ, wings and legs; in some cases more or less thickened externally, mostly with a parchment-like silken cocoon. Transformations in the ground or on the surface, or on limbs of trees.

Larvæ.—Like caterpillars, with a horny head, and on either side simple eyes; six horny pectoral, and from 12—16 skin-covered, ventral feet. In one case in default of these last, there are two antennæ-like organs on the side of the final segments. (*Lyda.*)

Eggs.--Generally deposited in the leaves or ribs of plants. In some few cases in slender or hollow stems.

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* Mr. Walsh (Proc. Ent. Soc., Dec., 1866, 225,) has noted several of my former errors of this kind. For a long time I supposed that there was a first segment beneath these basal plates, and that the abdomen had nine segments. But if one examines the larva of *Cimbex,* he will find but nine pair of spiracles, of which in the imago the first pair appear beneath the anterior wings; and the second pair in all the Ichneumonidæ and other genera examined, is found distinctly on the metathorax, back of the hinder wings, while the remaining seven pair of spiracles, which in the larva, are in the seven succeeding segments, also follow in succession on the abdomen of the imago.

Mr. Walsh also notes the fact that there is one more segment visible upon the dorsum than upon the venter. Burmeister states, that in the Hymenoptera the dorsum generally has one more segment; while Shuckard says, that in all the Aculeate Hymenoptera the males have seven and the females but six segments. (Burm. Man., 108.)

GENERIC SYNOPSIS.

Family TENTHREDINIDÆ.

Subfamily 1. CIMBICIDES.—Antennæ 5-8 articulate, short, clavate.

A. Wings with two marginal and three submarginal cells.
a. First submarginal cell with two recurrent nervures.
Lanceolate cell with straight cross line.
1. Antennæ 7-articulate.......................................1, **Cimbex.**
2. “ 8 “ ....2, **Trichiosoma.**
3. “ 5 “ ....3, **Clavellaria.**
Lanceolate cell closed in middle.
4. Antennæ 6-articulate. ....4, **Zarea.**
5. “ 7 “ ....5, **Abia.**
6. “ 5 “ ....7, **Plagiocera.**
b. First and second submarginal cells each with one recurrent nervure.
7. Antennæ 5-articulate ....6, **Amasis.**
c. Second submarginal cell with two recurrent nervures.
8. Antennæ 5-articulate.......................................8, **Pachylosticta.**

B. Wings with one marginal cell.
Three submarginal cells.
d. First and second submarginals each with one recurrent nervure.
1. Antennæ 6-articulate.......................................9, **Thulea.**
2. “ 6 “ not clavate.......................10, **Acordulecera.**
Four submarginal cells.
e. Second and third submarginals each with one recurrent nervure.
1. Antennæ 6-articulate.......................................11, **Sizygonia.**
2. “ 6 “ marginal cell appendiculate.......................... 12, **Perga.**
3. “ 7 “ marginal cell appendiculate.......................13, **Cephalocera.**

Subfamily 2. HYLOTOMIDES.—Antennæ 3-4 articulate, third long and often furcate in the males.

C. Wings with two marginal and three submarginal cells.
a. First and second submarginals each with a recurrent nervure.
1. Antennæ 4-articulate.......................................14, **Blasticotoma.**

D. Wings with one marginal, not appendiculate cell.
Four submarginal cells.
a. Second and third submarginals each with a recurrent nervure.
1. Antennæ of male furcate; of female slender, filiform.......................................15, **Sericocera.**
2. Antennæ of male furcate; of female somewhat clavate.......................................16, **Schizocerus.**
3. Antennæ of male simple; of female somewhat clavate.......................................17, **Atomacera.**
b. Second and intersection of second and third submarginals each with a recurrent nervure.........18, **Scobina.**
Three submarginal cells.
c. First submarginal receiving two recurrent nervures..19, **Themos.**

E. Wings with one marginal, appendiculate cell.

Three submarginal cells.

1. First submarginal with two recurrent nervures 20, *****

2. Second " " " " 21, ******

3. First and second submarginal each with one recurrent nervure........22, **Didymia.**

Four submarginal cells.

1. Second and third submarginals each with one recurrent nervure.

Posterior tibiæ without side spur........23, **Ptilia.**

Posterior tibiæ with side spur........24, **Hylotoma.**

2. Second submarginal with two recurrent nervures........25, **Pachylota.**

Subfamily 3. TENTHREDINIDES.—Antennæ 9-15 articulate.

F. Wings with one marginal cell.

Three submarginal cells.

1. First and second submarginals each with one recurrent nervure........26, **Cladius.**

2. First submarginal with two recurrent nervures........27, **Pristiphora.**

3. Second submarginal with two recurrent nervures........ **Euura.**

Four submarginal cells.

Antennæ 9-articulate.

4. Second submarginal with two recurrent nervures.

Lanceolate cell closed in middle........30, **Leptopus.**

Lanceolate cell petiolate; posterior tibiæ much flattened........29, **Cræsus.**

Lanceolate cell petiolate; posterior tibiæ as usual........31, **Nematus.**

Lanceolate cell petiolate; second recurrent nervure received at intersection of second and third submarginal cells........32, **Messa.**

Antennæ 13-articulate........33, **Perreyia.**

" 11 " ....34, **Camptoprium.**

5. Second and third submarginals each with a recurrent nervure.

Antennæ 10-articulate........35, **Dictynna.**

" 9 " ....36, **Aulacomerus.**

G. Wings with two marginal cells.

Three submarginal cells.

1. First and second submarginals each with a recurrent nervure.

Antennæ 10-articulate........37, **Druida.**

" 11 " ....39, **Fenella.**

" 9 "

" " " short, subclavate........38, **Fenusa.**

" " " long, slender.

Third joint longer than fourth........41, **Melicerta.**

Third and fourth joints nearly equal length..42, **Emphytus.**

2. Second submarginal with two recurrent nervures........43, **Dolerus.**

Four submarginal cells.
Antennæ 9-articulate; second submarginal with two recurrent nervures.
1. Lanceolate cell closed..44, U. **Dineura.**
2. " " contracted...... .... V. **Hemichroa.**
3. Second recurrent nervure received at intersection of second and third submarginals. W. **Mesoneura.**
3. Second and third submarginals each with a recurrent nervure.
Antennæ 11—15-articulate.................................. ..40, **Heterarthrus.**
" 9—11 "
I. Abdomen short, egg-shaped.
Antennæ 10 or 11-articulate.....................................47, **Athalia.**
" 9 " short; wings broad in crassate.......................45, **Sciapteryx.**
" 9 " wings as usual............48, **Selandria.**
II. Abdomen lengthened. Antennæ 9-articulate.
Coxæ lengthened, large.
1. Antennæ filiform, enlarged in middle.......46, **Waldheimia.**
2. Antennæ filiform, enlarged in middle.......50, 1. **Macrophya.**
3. Antennæ setaceous, long........................... 2. **Pachyprotasis.**
Coxæ as usual.
1. Antennæ short, thickened towards the apex 49, **Allantus.**
2. Antennæ setaceous, long.
Lanceolate cell with oblique cross nervure.
Head not unusually extended back of eyes 51, **Taxonus.**
Head extended back of eyes..................52, **Strongylogaster.**
Under wings with one middle cell............53, **Poecilostoma.**
Under wings with the outer cells complete 54, **Perineura.**
Lanceolate cell with straight cross nervure.55, **Tenthredo.**
Lanceolate cell closed in middle............... (**Synairema.**)

Subfamily 4. LYDIDES.—Antennæ multi-articulate.

H. Wings with one marginal cell.
Three submarginal cells.
Antennæ of males pectinate.........................57, **Pterygophorus.**
Four submarginal cells.
Antennæ of males bi-pectinate......................56, **Lophyrus.**
Antennæ of males pectinate.......................... **Monoctenus.**
Antennæ of males somewhat fissate...............58, **Tarpa.**
Antennæ setaceous, long.................................59, **Lyda.**

Subfamily 5. CEPHIDES.—Antennæ multi-articulate, neck elongate.

I. Wings with two marginal and four submarginal cells.
1. Antennæ subclavate, about 21-articulate; abdomen compressed... 60, **Cephus.**
2. Antennæ subclavate, about 27-articulate; abdomen compressed...62, **Phyllœcus.**
3. Antennæ filiform, abdomen short, cylindrical and subclavate..61, **Janus.**

Subfamily 6. XYELIDES.—Antennæ 13-articulate, third very long; ovipositor nearly as long as abdomen.

J. Wings with three marginal and four submarginal cells......63, **Xyela.**

Family II.—UROCERIDÆ.

A. Neck not elongate, ovipositor concealed.

a. Wings with one marginal and two submarginal cells......1, **Oryssus.**

B. Neck elongate, ovipositor distinct.

b. Wings with one marginal and four submarginal cells. Ovipositor exserted, short..2, **Derecyrta.**

c. Wings with two marginal and four submarginal cells. Ovipositor long.

1. The first, second and third submarginals each with a recurrent nervure..3, **Xiphydria.**
2. The second and third submarginals each with a recurrent nervure.
   Antennæ 17—25-articulate....................................4, **Urocerus.**
   Antennæ 5—6-articulate.......................................6, **Teredon.**

d. Wings with two marginal and three submarginal cells......5, **Tremex.**

Tubular Statement of the Form and Habits of the larvæ of the Tenthredinidæ. (From *Westwood's Int.* Vol. II, p. 97.)

"Larvæ, with extremity of the body not armed with a spine.

A. Larvæ with 22 *legs,* (6 pectoral, 14 abdominal, and 2 caudal.)

a. Feeding upon the leaves of plants.

Solitary, resting in a spiral manner, ejecting a fluid from the pores of the body; forming a cocoon (*Cimbex, Trichiosoma, Clavellaria.*)

Solitary or social, not ejecting a fluid from the sides of the body; forming or not forming a cocoon. (*Tenthredo, Athalia,* and certain *Allanti* and *Dolerus.*)

b. Feeding upon the leaflets of the pine, social, not ejecting a fluid from the sides of the body; quiescent, attached by the legs to the edges of the leaflets: forming a cocoon. (*Lophyrus.*)

B. Larvæ with 20 *legs,* (6 pectoral, 12 abdominal, and 2 caudal.)

a. Feeding upon the leaves of plants; resting at the edges or upon the surface of the leaves. (*Hylotoma atrata,* &c., *Cladius, Pristiphora, Nematus, Crœsus,* and certain *Tenthredines.* [Likewise *Zarea* and *Abia,* according to St. Fargeau.])

b. Feeding upon the leaflets of the pine, social; resting at the edge of the leaflets; forming a simple cocoon, (*Nematus abietinus* and *Leachii.*)

c. Living in the galls of plants. (*Nematus intercus.*)

C. Larvæ with 18 *legs,* (6 pectoral, 10 abdominal, and 2 caudal,) *Hylotoma enodis.*

D. Larvæ with only 6 *pectoral legs,* (*Lyda* [and *Xiphydria,* according to Dahlbom] *Cephus.*) (According to Westwood the larva of *Xiphydria* has a horny tail.")

Sub-family I.—CIMBICIDES, Westw.

Antennæ 5—8-jointed, short, generally clavate, third article longest.

A. Wings with two marginal and three submarginal cells.

a. First submarginal cell with two recurrent nervures.

Lanceolate cell with straight cross-line.

Genus I. **CIMBEX**, Oliv.

Cimbex, Oliv., Ent., 1789.
Crabro, Geoffr., Hist. des Ins., 1764.
Tenthredo, Linn., Fabr., &c.

Wings with two marginal and three submarginal cells; first submarginal receiving two recurrent nervures; lanceolate cell with straight cross-line; under wings with two middle cells; stigma lengthened, hardly wider than costa; costal edge wavy on each side of stigma. Bullæ in the submarginal cells as follows: one at the point receiving the first recurrent nervure, one below the middle of first cross nervure, and two, one near the bottom and one near the top of second nervure.

Antennæ clavate, 7-articulate, third as long as fourth and fifth; soldered, oblong-ovate.

Head as wide as thorax, labrum narrow, hardly visible below the nasus; mandibles 3-dentate.

Body stout, obscurely villose. Abdomen ovate in the females, cylindrical in males, with a deep, whitish, membranous notch, which is apparently in first segment of tergum, but is really the basal membrane between the basal plates of metathorax.

Legs.—Femora unarmed, the two posterior pair much thickened in males, with a shallow channel beneath to receive the bent tibiæ; tibiæ with two obtuse spurs at apex; anterior tarsi with obtuse processes beneath; a strong hook at tip of first joint of posterior tarsi of males; claws simple.

Larvæ twenty-two-footed, (6 pectoral, 14 abdominal, and 2 caudal,) solitary; bodies without hair, except in numerous small setigerous tubercles. But one brood during the year. They rest in a spiral position, tail inward, on the under side of leaves, and when disturbed sometimes eject a fluid from pores above the spiracles.

They form a strong, brown, oval cocoon, which drops to the ground with the falling leaves, and remains on the surface during the winter, the insect coming forth in June or July. This is the largest of the Tenthredinidæ, but does not appear in such numbers as to be injurious to vegetation.

1. **C. americana.**

Cimbex americana, Leach, Zool. Misc. III, 1817, 104. ♂.
Lepel, Mon. Tenth. 33, 87.
Harris, Inj. Ins, 519, ♂ ♀, fig. 243.
Norton, Proc. Ent. Soc. Phil. I, 201.
Cimbex femorata, Kirby, Faun. Bor. Am., 254, ♂.

Steel blue; abdomen purple tinged, in the females more or less spotted with yellow-white; antennæ and tarsi in part testaceous; wings variable. Length 0.80—1.08. Br. wings 1.80—2.28 inch.

♂. Antennæ luteous, the three basal articles more or less black; head and thorax black, with a bluish tinge; abdomen steel-blue, often tinged with purple; pectus widened and rounded, forming an acute angle with pleura; body and tibiæ thinly covered with long, blackish hair; legs long and stout; color blue, the second, third, fourth, and base of fifth tarsal joints testaceous. Wings hyaline, their apex and a spot below stigma fuscous.

♀. The female differs only from the male in having yellowish spots on each side of the abdomen, varying in number, size and form.

Both sexes differ in the color of the wings, some being clear and some violaceous. And the males differ in the color of the abdomen, some having it rufous. The abdominal spots also vary much in the females, thereby causing much confusion among different authors.

a.) 1. **C. americana**, ♂, as above.

With clear wings; abdomen of ♀ 6-spotted, spots on the third, fourth and fifth segments.

Canada, Massachusetts, Connecticut, Georgia, (Leach.)

a.) 2. **C. americana**, var. *Ulmi*, ♂.
Cimbex ulmi, Peck., MS. Harris Cat. and Inj. Ins., ♀.
Emmons, Nat. Hist. N. Y. Agric. V, 101, ♂ ♀.

Wings more or less obscure violaceous; abdomen of ♀ 6-spotted; spots on the third, fourth and fifth segments.

b.) 1. **C. americana**, var. *LaPortei*. ♂.

With clear wings; abdomen, except at base, chestnut or purplish-red.

Mt. Washington, N. H.; Canada.

b.) 2. var. *LaPortei*, ♂.
Cimbex LaPortei, Lepel, Ann. Soc. Ent. II, 1833, 454, ♂.
Cimbex Kirbyi, Brullé, Hym. IV, 672, ♂.

Wings obscure violaceous; abdomen, except at base, chestnut or purplish-red.

Mass., Conn., New York.

No females as yet seen with this variation.

c.) 1. **C. americana**, var. *luctifera*, ♀.

Wings hyaline; abdomen 8-spotted; on each side of second, third, fourth and fifth segments.

New England; Canada.

c.) 2. **C. americana**, var. *luctifera*.
Cimbex luctifera, Klug, Verhandl, &c., Berlin I, 85, ♀ ♂. Jahrb. I, 225, ♂.
Cimbex viardi, Lepel, Ann. Soc. Ent. II, 454, ♀.

Wings obscure violaceous; abdomen 8-spotted; on each side of second, third, fourth and fifth segments.

Georgia, (Klug.) New York; Pennsylvania.

The wings are not always equally obscure, but sometimes have irregular clearer spots.

Two specimens from Pennsylvania, (Coll. Am. Ent. Soc.) are 7-spotted, having four on one side and three on the other side of abdomen.

d.) 1. **C. americana,** var. *decem-maculata.*
Cimbex decem-maculata, d'Urban, Can. Zool., 18, 7085, ♀.

Wings hyaline; abdomen 10-spotted, on second, third, fourth, fifth and sixth segments.

Spots approaching, not coalescing. Arctic Am. Youkon River, (Smith. Ins.)

Spots coalescing. Lake Superior, (Cambr. Mus.) Canada; Hudson's Bay Territory.

d.) 2. **C. americana,** var. *Dahlbomii.*
Cimbex Dahlbomii, Guer. Icon. Reg. Anim. III, 393, ♀.

Wings obscure violaceous. Abdomen 10-spotted; second, third, fourth, fifth and sixth segments.

Spots not coalescing, those on second and sixth small.

Spots coalescing, with or without the apical segment pale.

New Jersey; New York; Pennsylvania.

e). 1. **C. americana,** var. *Alba,* ♀.

Wings hyaline. Abdomen 12-spotted, on second, third, fourth, fifth, sixth and seventh segments.

Spots coalescing on the fourth, fifth, sixth and seventh segments, the anal segment and apical half of venter, white.

Big Island; Gt. Slave Lake, (Smiths. Ins.) Mr. Kennicott.

The great similarity in kind of variation seems to prove that the clear and dark winged specimens belong to the same species, subject to as great changes as the *C. variabilis* of Europe, which it greatly resembles. The *b.*) 2, (*La Portei*) has been bred from larvæ which produced also *C. Ulmi, a.*) 2, ♂ ♀, (Proc. Ent. Soc. Phil., I, 201.) Dahlbom (Westwood Mod. Class. II, 98) states that the variations in color of *C. variabilis* are produced by its diversity of food. This species like that, is an exception to ordinary rules, for most Hymenoptera are true to their types.

The range of this insect is from the Atlantic to Russian America, and but few of the clear-winged species are found south of the Great lakes, while few of those with obscure wings are found north of this.

Klug described the male of *C. luctifera* as having spots on the abdomen, and in appearance like females. It would seem best to consider this an error, until such specimens are taken in Georgia or elsewhere.

The larvæ are known to feed on the elm, the willow and the linden. They get their full growth about the middle of August, when they are from one and a half to two inches in length. Skin rough, transversely wrinkled; color pale grayish-yellow, with a stripe of two slender black lines along the back, from head to tail. Spiracles black. When at rest they hold to the leaf with the fore feet, and twist the body inward sidewise into a spiral position.

2. **C. Klugii,** Leach Zool. Misc., No. 6. Lepel, Mon. Tenth. 30, 85, ♀.—St. Domingo.

3. **C. McLeayi,** Leach, Zool. Misc., No. 2. Lepel, Mon. Tenth. 30, 82, ♂—St. Domingo.

4. **C. venusta,** Perty, Delect. Anim. Art. 1. 1830, 129, Tab. xxvi, fig. 1.—Brazil.

Genus 2. **TRICHIOSOMA,** Leach.

Trichiosoma, Leach, Zool. Misc.
Cimbex, Fabr. and authors.

Wings as in *Cimbex.*

Antennæ 8-articulate; 3d article nearly half the length of antennæ, very slender; club 3-articulate, the two last closely soldered.

Head of ♂ as wide as thorax, of ♀ not as wide as thorax, nasus retracted, labrum orbicular; mandibles generally bidentate.

Body densely pilose. Abdomen much like *Cimbex*, notch in first segment not so deep.

Legs stout; the four posterior femora of males thickened, deeply channeled and dentate; tibiæ with two obtuse spurs.

Larvæ and metamorphoses as in *Cimbex.*

1. **T. triangulum.**

Trichiosoma triangulum, Kirby, Faun. Bor. Am. iv, 1837, 254.
Trichiosoma lucorum, Kirby, Faun. Bor. Am. iv, 1837, 255.
Trichiosoma bicolor, Harris, MSS., Norton, Proc. Bost. Soc. viii, 150, ♂.

"Black, hairy, with cinereous lanuginous hairs; fourth, fifth and sixth articles of antennæ, wings, tibiæ and tarsi, testaceous. thighs black-blue; abdomen ferruginous, with a dorsal black isosceles triangle." Length 0.60—0.68. Br. wings 1.32—1.56 inch.

♂ ♀. Body black, shining, more or less punctured, covered with soft and woolly whitish hairs.

Head, excluding the mandibles, depressed, orbicular, as wide as the trunk, (that of female much narrower); mandibles crossed, very sharp, black, polished, distinctly bidentate; anterior margin of the nose wavy, emarginate; labrum extended, sub-orbicular, convex in middle, depressed in middle before, sides turned up; antennæ, the second, base of third, fourth, fifth and sixth articles testaceous; eyes prominent, vertex square, marked out by a ridge on each side; trunk sub-globose, anterior lobe of thorax with a longitudinal furrow; thighs and coxæ black-blue, under a strong magnifier, beautifully, minutely reticulated, which gives them a silky lustre, the rest of the leg testaceous; a single strong dentation near the tip, on each side of the groove beneath the two hinder pair of thighs. Wings testaceous hyaline, with piceous nerves and a cloud at the apex; a dense testaceous spot at juncture of marginal nerve with stigma; stigma as in *Cimbex;* abdomen ferruginous or ochraceous, with a dorsal, triangular, black spot, extending from base toward the apex, but not entering the last segment; the basilar ventral segments are spotted with brown.

Var. ♂. Abdomen, except apex, entirely black. (*T. bicolor.*) Mt. Washington, N. H.; Summit, (*T. lucorum*, Kirby.)

Var. ♂. Abdomen wholly purple-brown. (Canada.)

Lat. 65°, (Kirby.) Canada, Hudson's Bay Territory; Youkon River; Arct. Am., (Kennicott.) Puget's Sound, (Kennerley, Smiths. Inst.)

This seems to be exclusively a northern insect.

Mr. Kirby does not give the sex of either *T. triangulum* or *T. lucorum*, but from the description, it is evident that one is a male and the other a female. I have concluded, whether rightly or not, that they belong to the same species.

2. **T. lanuginosa,** n. sp.

Purple-black, labrum angulate before; shoulders and pleura with dense cinereous hair; wings blackish hyaline. Length 0.64. Br. wings 1.60 inch.

♀. Shining purple-black, thickly covered with minute punctures; antennæ piceous black; head narrow; nasus with a triangular notch in middle; labrum as in *T. triangulum*, produced to an angle instead of being rounded; prothorax and pleura covered with long, dense, pale cinereous hair, less dense on the scutel and very little upon the tergum; abdomen stout and very wide; legs black; tarsi piceous, except base of first and apical two-thirds of last joint; wings blackish hyaline, with a yellowish tinge, clouded at apex; a dense piceous spot, extending from stigma across most of first discoidal cell.

Sierra Cxy, California. (Coll. Smiths. Inst. J. Behren.)

3. CLAVELLARIA, Leach.

Clavellaria, Leach, Zool. Misc.
Cimbex, Fabr.

Wings as in *Cimbex.*

Antennæ 5-jointed, fifth joint forming a club as large as the third.

Head nearly as wide as thorax; eyes not approximate; labrum large; mandibles long in the males.

Body slightly villose; emargination of first segment of abdomen very slight; the four posterior femora unarmed, thickened in males.

Inhabits Europe.

Lanceolate cell closed in middle.

4. **ZAREA,** Leach.

Zarea, Leach, Zool. Misc.
Tenthredo, Spec., Jurine, Fab., &c.

Wings as in *Cimbex*, excepting that the lanceolate cell is closed; they are generally fasciate; the stigma is wider.

Antennæ 6-articulate, third article long, slender and curved; fifth and sixth forming an obtuse club.

Head small, much narrower than thorax; eyes united behind in the male; maxillary palpi having the three first joints short, the three others elongate; nasus retracted; labrum advanced.

Body glabrous; abdomen as in *Cimbex*, but rather more ovate and flattened, with deeper sutures in females; basal plates not emarginate.

Legs slender; femora of males not incrassate; tibiæ with two obtuse apical spurs.

1. **Z. inflatus.**

Zarea inflatus, Norton, Proc Bost. Soc. viii, 151, ♀.

Greenish-black; abdomen blue-black, obovate, glabrous; apex of basal membrane whitish; legs testaceous; wings fasciate. Length 0.48. Br. wings 1.00 inch.

♀. Head and thorax metallic, greenish-black; antennæ black, apical joints piceous beneath, apical joint of club longest; head coarsely punctured, and, with the prothorax and pleura covered with whitish hair; eyes large, reniform, partly inclosing ocelli and base of antennæ; nasus not so much retracted as in *Trichiosoma*, with a sinuous edge and large fovea behind; thorax sparsely, abdomen finely punctured; collar and abdomen blue-black; the cenchri at sides of post-scutel, ordinarily round, are oval and lengthened; base of metathorax and of basal membrane whitish; abdomen flattened, sutures distinct, curved; each of the five apical segments having in the middle a transverse glaucous band of fine hair, greenish beneath, the basal segments beneath and the legs brownish-yellow; coxæ at base and a band in middle of femora black; wings hyaline, nervures and stigma yellow testaceous; apex of superior wings, a broad band at the stigma and a dense darker spot fuscous.

Farmington, Conn. One specimen.

Mr. Walsh informs me that he has both ♂ ♀ from Massachusetts.

5. ABIA, Leach.

Abia, Leach, Zool. Misc.
Tenthredo, Jurine, Fab.

Wings as in *Zarea*.

Antennæ seven-jointed; third article long and bent; club obtuse, of three articles, the two last coalescing.

Head small, eyes nearly meeting behind in male; nasus and labrum as in *Zarea;* joints of maxillary palpi unequal.

Body villose; abdomen having a metallic silken hue as in *Zarea;* a raised velvety patch on the tergum in males (wanting in females); basal plates not emarginate.

Legs rather short, slender; femora not incrassate, tibiæ with rather obtuse spurs.

These insects are of smaller size and apparently gregarious.

1. **Abia Kennicotti**, n. sp.

Black, varied with blue and green; legs white, at base blue; wings yellow hyaline, with piceous fasciæ. Length 0.32. Br. wings 0.64 inch.

♂. Antennæ black; third article not so long as the fourth and fifth together; sutures of club distinct. Head metallic-green, coarsely punctured, eyes nearly meeting; nasus hardly retracted, curved, but slightly emarginate; labrum pointed, oval, and with the mandibles ferruginous; palpi varying in color; head, thorax and tip of abdomen covered with sparse, long, blackish cinereous hair. Thorax black above, pleura greenish, pectus bluish; abdomen with metallic reflections; a brownish velvety patch on the summit of third, fourth, fifth and sixth segments, with a shining cinereous band of short hair on each side; edges of abdomen beneath, brownish; coxæ and femora blue; tips of femora and remainder of legs white; tarsi growing darker toward apex; spurs not very obtuse. Wings hyaline; on the apex of superior pair and the basal half below stigma two fuscous obscure fasciæ, in the larger of which the first discoidal and second brachial are clear; nervures testaceous, stigma a little enlarged, with a dense spot beneath the base; lower wings smoky hyaline.

♀. The female has the tergum beyond the second segment sericeous with whitish hair.

2. **Abia caprifolium**, n. sp.

Black, with faint greenish reflections on abdomen; two white bands at base of metathorax; wings fasciate. Length 0.36. Br. wings 0.70 inch.

♀. Antennæ ferruginous toward tip, third joint not longer than fourth and fifth together; sixth and seventh closely soldered, the apex truncate; eyes reniform; nasus slightly emarginate; palpi white; head and thorax delicately punctured and covered with long pale hair; a whitish band across metathorax below scutel, and another beneath, covering most part of basal plates; tergum sericeous with whitish hair on all but the two basal segments; ovipositor pale; apical segment and base of venter whitish; coxæ and a wide band on all the femora black; trochanters and legs below the knees white; wings yellowish hyaline, both pair fasciate across the middle and at tip; the second brachial clear, a denser spot below stigma; nervures yellowish.

Illinois.

One specimen (Coll. Am. Ent. Soc.) collected by Mr. C. V. Riley, of Chicago. He mentions it as quite common there at times. "Color of larva bluish-green on back; yellow at sides, which is pale near spiracles, and covered with small black dots. Between every segment is a small, transverse, yellow band, with a black spot in the middle and at each end. Head free, of a brownish-black above and color of the body beneath. Eyes quite black and distinct. Legs color of sides and body. When touched it curls up and falls to the ground. It spins a compact cocoon, (Long 0.50 inch), oval, rounded at ends, slightly transparent, color of thin glue. Remains dormant during the winter in the caterpillar state, and early in the spring changes to a chrysalis, which is soft, pale yellow on abdomen above and on sides, rather greenish below; remainder of body white; the antennæ, legs and wing-sheaths also white, transparent; eyes brownish. Shortly before it comes forth it becomes blackish, and the eyes quite black," Number of legs not given.

The larva feeds on the Caprifolium (honeysuckle).

3. **A. cerasi.**

Abia cerasi, Fitch, Third Report N. Y. State Agr. Soc, 1859, p. 67—93.

"Black; club of antennæ 4-jointed; abdomen and thighs blue-black and the feet and tips of the shanks pale yellow; thorax thinly covered with pale greenish-yellow hair; wings transparent, smoky yellowish, with black veins, those on the basal third pale yellow. Length 0.60. Br. wings 1.35 inch."

New York. (Not seen.)

Dr. Fitch states that he bred this insect from one of two cocoons found on the wild cherry, and that the club of the antennæ is 4-jointed instead of three, and the antennæ 8-jointed instead of seven. Cocoons coarse brown, firm and tough, cylindrical, with rounded ends. Length 0.80. Wide 0.38 inch. The insect came forth in March.

b. Wings with first and second submarginal cells each receiving a recurrent nervure.

6. AMASIS, Leach.

Amasis, Leach, Zool. Misc.

Wings with two marginal and three submarginal cells; first and second submarginal each with a recurrent nervure; lanceolate cell closed in middle.

Antennæ 5-articulate, the fifth forming an obtuse club.

Head small; eyes not approximating in the males; labrum short; mandibles bidentate.

Abdomen naked, punctate, depressed, basal membrane not visible.

Legs short, the fourth posterior tibiæ with acute spurs; last joint of tarsi much shorter than that preceding.

Inhabits Europe.

a. Wing with first submarginal cell receiving the two recurrent nervures.

7. PLAGIOCERA, Klug.

Plagiocera, Klug.

Wings with two marginal and three submarginal cells; first submarginal with two recurrent nervures; wings rounded at apex; lanceolate cell closed in middle. Under wings two middle cells.

Antennæ 5-articulate; the fifth forming an obtuse truncate club.

Legs.—Spurs simple; claws with an inner tooth.

1. **P. thoracica,** Klug, Jahrb., 1834, 228, Tab. II, fig. 5.—Brazil.
2. **P. Klugii,** Brullé, Hym. iv. 1846, 672, Pl. 48, fig. 3.—South America.

c. Wings with second submarginal cell receiving two recurrant nervures.

8. PACHYLOSTICA, Klug.

Pachylostica, Klug.

Wings.—Two marginal and three submarginal cells, the second submarginal with two recurrent nervures, hexagonal in form; lanceolate cell closed in middle; wings oblique truncate at apex; stigma forming an outward projection on anterior wings.

Antennæ 5-articulate, the fifth forming a lengthened outward club.

Legs.—The spurs lamellate.

Only the females known.

1. **P. tibialis,** Klug, Monogr. 1824, 173, 1 ♀; Jahrb., 228, 1.—Brazil.
2. **P. violacea,** Klug, Monogr. 174, 2 ♀; Jahrb., 228, 2.—Brazil.
3. **P. albiventris,** Klug, Monogr. 174, 3 ♀; Jahrb., 228, 3; Brullé, Hym. iv, 671, Pl. 48, 4.—Brazil.
4. **P. chalybea,** Perty, Delect. Am. Art. 1, 1830, 129, Tab. xxvi, fig. 2.—Brazil.

B. Wings with one marginal and three submarginal cells.

First and second submarginal cells each with one recurrent nervure.

9. THULEA, Say.

Thulea, Say, Bost. Jour. I, 1835, 213.

Wings.—One marginal and three submarginal cells.

Antennæ 6-jointed, the sixth clavate; second twice as long as first and second; fourth minute, shortest; fifth as long as third; sixth nearly as long as third and fifth, slightly dilated at tip.

Scutel large.

1. **T. nigra.**

Thulea nigra, Say, Bost. Jour. I, 1835, 213.

"Body black; nasus and labrum green; spot before the wings, wing scale and feet yellowish green.

"Length to the tip of the wings, three-twentieths of an inch.

"*Inhabits* Mexico."

Not seen.

10. ACORDULECERA, Say.

Acordulecera, Say, Bost. Jour., I, 1835, 210.

Wings—One marginal and three submarginal cells; first and second submarginal each with a recurrent nervure; first submarginal long; lanceolate cell wanting. Stigma large, as in *Hylotoma.*

Under-wing with one inner cell. It has but one marginal, two submarginal, one discoidal and two medial cells, and the externo-medial nerve joins the costa without bending, leaving the marginal cell with an acute angle behind.

Antennæ six articulate, very short, not clavate, apical joint not enlarged, but somewhat globose.

Body short and stout, maxillary palpi having the three apical joints long, the sixth longest.

Legs short; the four posterior tibiæ with a side spur, as in *Hylotoma*, apical spurs all sharp, claws simple.

This genus would seem to require a separate division, as its antennæ are filiform and not clavate, and its affinities are rather toward the Hylotomides or Tenthredinides.

1. **A. dorsalis.**

Acordulecera dorsalis, Say, Bost. Jour. I, 1835, 200. ♀ ♂.

"Black; hypostoma, a spot at base of the tergum and feet whithish." Length 0.12—0.16. Br. wings 0.36—0.48 in.

" ♂ ♀. Black, with minute whitish hairs; nasus, labrum and mouth white; mandibles rufous at tip; thorax, with the anterior segment, curving to the base of the wing, white; line of the insertion of the wings white; wings a little dusky; nervures fuscous; tergum pale yellowish on the basal disk; blackish brown at tip; venter more or less yellowish white, dusky or blackish at tip; feet and coxæ whitish green.

Var. a. Feet and part of the costal rib green; scutel and posterior portion of the stethidium whitish.

Var. b. Thorax and abdomen entirely black."

Indiana, (Say.) New England, Maryland.

Wings with one marginal and four submarginal cells.

Second and third submarginal cells each with a recurrent nervure.

11. **SYZYGONIA**, Klug.

Syzygonia, Klug, Jahrbucher, die Ins., 1834, 229.

Wings with one marginal and four submarginal cells, of which the first and second are the smallest, and the second and third each receive a recurrent nervure; wings rounded at apex.

Antennæ, six-articulate, the sixth clavate, the third longest.

Legs. Anterior inner tibial spur at apex bifid!

a.) Antennæ 5-articulate before the club, (third submarginal cell not receiving the recurrent nervure.)

1. **S. cyanoptera**, Klug., Monogr. 1824, 171, ♀; Perty, Spix. and Mart. Delect., III, 130, Pl. xxvi, 4.—Brazil.
2. **S. cyanea**, Klug, Brullè, Hym. iv, 671, Pl. 48, 2.—Brazil.
3. **S. ænea**, Perty, Spix. and Mart. Delect. 1830. 130, Pl. xxvi, fig. 3.—Brazil.

β.) Antennæ 4-articulate before the club, (third submarginal wing cell receiving one recurrent nervure.

4. **S. cyanocephala**, Klug, Monogr. 1824, 180, 2; Jahrb. 229, 2, Pl. II, 6, 1.—Brazil.

The figure drawn by Klug has the marginal wing cell appendiculate.

12. **PERGA**, Leach.

Perga, Leach, Zool. Misc. Latr. Norw. Dict., 2d ed.

Wings with one marginal, appendiculate cell and four submarginal cells; the first and second very small, the second and third each receiving a recurrent nervure.

Antennæ six-articulate, the first five short, the last long and more dilated within than without.

Inhabits New Holland.

The following genus is thought by Brullé and Klug to belong more properly to Hylotomidæ.

13. **CEPHALOCERA**, Klug.

Cephalocera, Klug, Jahrbuch., 1843. 252.

Wings with one marginal, appendiculate, and three or four submarginal cells; the first and second (or second and third, if one counts the incomplete cell at the base), each receiving a recurrent nervure.

Antennæ seven-articulate, third longest, seventh slightly enlarged.

1. **Cephalocera ? calcar,** n. sp.

Testaceous; antennæ and two vittæ on thorax black; apical half of wings obscure. Length 0.24. Br. wings 0.52 in.

♀. Testaceous; antennæ villose, dark piceous, seven jointed, the first twice as long as second, the second four times as long as first, sixth slightly globular at tip, seventh as long as sixth, not clavate, (somewhat like *Selandria*;) the two basal joints white; head and body testaceous; two vittæ on side lobes of meso-thorax, five or six obscure spots on middle of tergum; breast piceous; legs testaceous, hinder tibiæ at apex black; the four hinder tibiæ each with a side spur; all the apical spurs acute; first tarsal joint nearly as long as all the remainder; tarsi slender, not dilated, no patellæ visible; wings hyaline, all appendiculate, their apical half clouded; nervures yellowish, stigma large, nearly white; one marginal and four submarginal cells, the first nearly as long as second; the 2d receiving the two recurrent nervures at or very near the intersection of first and second, and second and third cells; first and second submarginal of equal length; third shorter, not much widened at outer end; lower half of first submarginal cross nervure wanting; lanceolate cell wanting, obsolete; underwings one middle cell.

Cordova, t. c. Mexico. (1 ♀.) (Coll. of H. deSaussure.)

This can hardly belong to *Cephalocera*, which I have not seen, but seems rather a connecting link between *Hylotoma* and Tenthredinides, having the wings and side spurs of the one, and the antennæ of the other. The bullæ occupy the lower half of the first submarginal cross nervure, and most part of second and third.

2. **C, pumila,** Klug, Jahrbuch. 1834, 252. Pl. II, 10 ♂.—Brazil.

Sub-Family 2. HYLOTOMIDES.* Westw.

Antennæ three or four-articulate; third joint long, and in the males often furcate; marginal cells not appendiculate.

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* The arrangement of genera here presented is arbitrary, and probably incorrect, as the definitions of Klug are short, and founded only on the upper wing cells, and are apparently faulty, while the arrangement of other authors seems to be taken up without seeing the insects, and the very few specimens within my reach do not agree with the diagnoses laid down.

C. Wings with two marginal and three submarginal cells.

14. BLASTICOTOMA,* Klug.

Blasticotoma, Klug, Jahrb., 1834. 251, Tab. II, fig. 9.

Wings with two marginal and three submarginal cells; the first and second submarginals each with a recurrent nervure; lanceolate cell with oblique cross line; under wings with two middle cells.

Antennæ four-articulate—the third long, the fourth very small.

The males are not yet described.

Inhabits Germany.

The first submarginal wing cell probably has an incomplete cross line, as Klug says this genus has four submarginal cells, and other writers three.

D. Wings with one marginal cell.

Four submarginal cells.

a. The second and third submarginal cells each with a recurrent nervure.

15. SERICOCERA, Le Pel. MS.

Sericocera, Brullé, Hym. iv, p. 669.
Hylotoma, ********. Klug, Jahrb., 249.

Wings, one marginal, not appendiculate, and four submarginal cells, of which the second and third each receive a recurrent nervure; lanceolate cell closed in middle; under wings with two inner cells. The bullæ in this differ from those of *Hylotoma* in there being but one, which is small, near the base of second submarginal cross nervure, from which two clearer lines run to the two bullæ at the ends of the third cross nervure.

Tibiæ all simple, (without side spurs).

Brullé considers this to be identical with the eighth division of *Hylotoma,* Klug, doubtless on the ground that the first submarginal cell is wholly or partially incomplete. Klug states that the species have three submarginal cells, first and second each with a recurrent nervure.

In the absence of proper data, I have chosen to consider the antennæ of the ♀ filiform, and those of *Schizocerus* ♀ subclavate.

Sericocera plumicornis, n. sp.

Black, shoulders white, antennæ ♂ bifurcate, slender, curled, ciliate. Length, 0.28. Br. wings, 0.60 inch.

♂. Shining black. Antennæ black, third joint bifurcate, slender, decreasing in size towards apex, curled, ciliate; tegulæ and prothorax white, remainder of body black; abdomen rather stout; legs black;

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* This is considered by authors as intermediate between Cimbicides and Hylotomides. Hartig makes for it a separate sub-family.

anterior pair distinctly white before; tibiæ simple, first tarsal joint as long as all the rest. Wings violaceous sub-hyaline, most obscure in marginal cell; first submarginal cross nervure imperfect; recurrent nervures received in middle of second and third cells; third cell contracted below, half as wide as above; lanceolate cell widely contracted; under wings with two inner cells, no lanceolate cell.

Cordova, t. c. Mexico. One male. (H. deSaussure.)

2. **Sericocera villosus**, n. sp.

Black, antennæ setaceous, villose, thorax waxen, wings violaceous. Length 0.35. Br. wings 0.92 in.

♀. Head and abdomen black; antennæ black, not longer than to scutel, setaceous, woolly, with black hair; head small, not more than two-thirds the width of thorax; tegulæ and whole of thorax pale yellow waxen color; thorax quite globular before; abdomen black, short and stout. Anterior coxæ, femora and tibiæ before, medial coxæ and femora, except tips, yellowish; remainder of legs black. Wings violaceous, quite ample, darkest toward base, a dark spot covering marginal and upper half of submarginal cells; stigma black, first submarginal cell almost square, second and third each with a recurrent nervure in middle; third submarginal contracted below, its outer nervure angulate, with a short produced nervure near upper end, below upper bullæ; lanceolate cell widely contracted; under wings with two middle cells, their lanceolate cell small, with an indistinct cross line above.

Cordova, t. c. Mexico. One ♀. (H. deSaussure.)

3. **Sericocera alternator**, n. sp.

Ochraceous; head, metathorax and breast black; wings semi-obscure. Length 0.40. Br. wings 1.02 in.

♀. Shining, ochraceous. Basal joint of antennæ black, remainder wanting; head not as wide as thorax, black; eyes widely separated; ocelli ruby colored; nasus slightly emarginate; tegulæ black; thorax and abdomen ochraceous, with the metathorax, and a large spot on breast black; abdomen stout; coxæ and legs black; the anterior pair pale before. Wings ample, violaceous semi-obscure, darkest at base; stigma and nervures black; first submarginal cross nervure obsolete, second and third cells receiving the recurrent nervures in middle; third contracted to half its width below; lanceolate cell widely closed, that in lower wing wanting.

Jalapa, Mexico. One female. (H. deSaussure.)

4. **S. (Hylotoma) compressicornis**, Klug, Jahrbuch. 1834, 249, 93, ♀.—Brazil.

5. **S. (Hylotoma) hypoleuca**, Klug, Jahrbuch. 1834, 250, 95, ♂.—Brazil.

6. **S. (Hylotoma) mesomela,** Klug, Jahrbuch. 1834, 250, 94, ♀.—Brazil.
7. **S. (Hylotoma) nigrita,** Klug, Jahrbuch. 1834, 250, 96, ♂.—Brazil.
8. **S. (Hylotoma) piceiventris,** Klug, Jahrbuch. 1834, 250, 97, ♀. —Brazil.
9. **S. (Hylotoma) præcox,** Klug, Jahrbuch. 1834, 249, 92, ♂.—Bahia, Brazil.
10. **S. spinolæ,** Brullé, Hym. iv, 1846, 669, ♂. Pl. 47, fig. 5.—South America.

16. SCHIZOCERUS, Latr.

Schizocera, Latr., Lepel. et Serv., Brullé, Westw., Stephens, Hartig, Curtis, &c.
Hylotoma, * * * Klug.
Cryptus, Leach, Lepel.

Wings.—One marginal, not appendiculate, and four* submarginal cells, the first imperfect (or with obsolete nervure,) and the second and third each with a recurrent nervure; lanceolate cell petiolate; third submarginal narrow, not greatly wider above, the cross-nervures curved, nearly parallel; submarginal bullæ five—one on first transverse nervure, one near the reception of first recurrent nervure, one near the base of second, and two on the third transverse nervures.

Antennæ 3-articulate, bifurcate above the second article in the males, either clavate or long and simple in the females.†

Tibiæ simple.

1. **S. plumigera.**

Hylotoma plumigera, Klug, Berl. Mag. vi, 1814, 306, 37. B. a.; Jahrb., 243, 71.
Cryptus Klugii, Leach, Zool. Misc. III, 125, 2 ♂ ♀.
Lepel. Monogr. 53, 150 ♂ ♀.
Schizocerus Klugii, Lep., et Sel. Encyc. Meth. Ins. ix, 573.

♀. Antennæ black; Head black; thorax saffron-yellow; abdomen yellow, anus black; legs black, the anterior yellow; wings fuscous hyaline. Long 2¾ lines. Br. wings 6¼ lines.

♂. The male has the back black, with antennæ above the second article bifid and quite ciliate.

Klug adds: "Nasus, mandibles and palpi, clear brownish; spot on thorax enclosing most of middle lobe; a black-brown spot on breast; legs yellow, the tarsi dusky; wings throughout a uniform blackish color; nerves and stigma dark brownish; femora at base, and tibiæ, also the tarsi are sometimes blackish."

Georgia, (Leach.) New York, (Klug.)

A female from the Eastern States has the antennæ short, the head black, a vitta on anterior lobe of mesothorax, spots on metathorax, a spot on breast, apical segment of abdomen, and the three apical segments of venter black; legs wholly black, except the anterior femora at tip before, and the tibiæ and tarsi pale; wings clouded, darkest at base; first submarginal with incomplete cross-line; the second and third narrowest at top and bottom, their outer nervures curved. In this species the second submarginal bulla is at the reception of the first recurrent nervure. Specimens from Colorado are a little larger, and have the back of head more or less yellowish. These may prove to be a separate species. Long 3¼—4 lines. Br. wings 7—8½ lines.

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* Lepel., Klug and Hartig, give this four submarginal cells. Brullé and Stephens but three.

† Westwood and Stephens state that the antennæ of the females are long and simple. Lepel. calls them clavate.

2. **S. abdominalis.**

Schizocerus abdominalis, Cresson, Proc. Ent. Soc. Phil. iv, 1865, 243, 2, ♂. Length 3½ lines. Br. wings 7½ lines.

"♂. Black, polished; face clothed with short, pale, sericeous pubescence; mouth piceous; antennæ as long as the head and thorax, black; the third joint pale within, furcate and clothed with long black pubescence. Thorax smooth and polished; prothorax honey-yellow; tegulæ piceous. Wings ample, tinged with fuliginous, especially about the base; nervures and stigma black. Legs shining black, the anterior tibiæ and tarsi pale. Abdomen bright honey-yellow, with two transverse spots at the extreme base and the extreme tip fuscous."

Colorado Territory.

This is probably the male of the specimens of *S. plumigera* from Colorado.

3. **Schizocerus ebenus**, n. sp.

Black; antennæ furcate, anterior legs pale before; wings blackish. Length 0.18. Br. wings 0.50 inch.

♂. Shining black; antennæ furcate above second joint, filiform, pilose, juncture of second and third joints pale; nasus emarginate; mouth black; body and legs black, the anterior pair pale beneath below the knees; hinder tibiæ somewhat swollen at apex; wings blackish opaque; near the apex less obscure; first submarginal cross-nervure obsolete; second and third submarginals contracted at top and bottom, third submarginal narrow; fourth submarginal quite large.

New York. One ♂.

In this and all the following species the second submarginal bulla covers most of the nerve between the recurrent nervure and the second transverse vein.

4. **Schizocerus sericeus**, n. sp.

Black, the head and thorax bronze sericeus; tegulæ and two edges of anterior angle whitish; wings hyaline. Length 0.26—0.30. Br. wings 0.50—0.60 inch.

♀. Black: antennæ short, not reaching scutel, clavate, but larger in the middle than at apex, second joint very short; head and thorax with metallic reflections and covered with short whitish pile; ridge between antennæ elevated; nasus emarginate; palpi pale; tegulæ and anterior angle waxen-white; a semi-obsolete whitish band on apex of each segment of tergum; abdomen stout; legs with the coxæ, a band on all the femora and apex of posterior tibiæ blackish, remainder fuscous, paler before; inner space of anterior tibiæ large and obtuse; wings hyaline, very faintly clouded; nervures brown-yellowish at base; first submarginal square, not rounded behind; second and third cells receiving the recurrent nervures near their base; third submarginal large, form approaching that of *Atomacera.*

Maine; Illinois.

5. **Schizocerus privatus**, n. sp.

Black, with semi-obscure wings; abdomen yellow-red. Length 0.20. Br. wings 0.54 inch.

♀. Black. Antennæ moderate, flattened above the middle and thus appearing filiform from above, pilose; head wide, nasus yellowish. Thorax black, except the sides of metathorax and basal plates, which, with the abdomen are yellow-red, tip of ovipositor sheath black; legs black, their four hinder coxæ, trochanters, and base of femora yellow; wings blackish, sub-opaque, the first submarginal cell distinct, but the dividing nervure obsolete in middle; third submarginal quite narrow.

La. New Orleans. One ♀.

This may be the same as *Atomacera cellularis* of Say.

6. **S. (Hylotoma) albicollis**, Klug, Jahrb., 1834, 245, 76, ♀.—Brazil.
7. **S. (Hylotoma) brasiliana**, Klug, Berl. Mag. vi, 1814, 308, 40; Jahrbuch., 245, 75.—Brazil.
8. **S. cyanoptera**, Perty, Spix and Mart., Delect. Hym. 1830, 130, Tab. xxvi, 4. —Brazil.
9. **S. (Hylotoma) filicornis**, Klug, Jahrbuch., 1834, 244, 74, ♂ ♀.—Brazil.
10. **S. (Hylotoma) gibba**, Klug, Jahrb., 1834, 245, 77, ♀, Tab. II, fig. 7.—Brazil.
11. **S. hyaloptera**, Perty, Spix and Mart., Delect. 1830, 130, Tab. xxvi, fig. 6.—Amazon.
12. **S. obscura**, Brullé, Hym. iv, 1846, 668, Pl. 47, fig. 4.—South America.
13. **S. xanthoptera**, Perty, Spix and Mart., Delect. 1830, 130. Tab. xxvi, fig. 5.—Rio Negro, Brazil.

17. ATOMACERA, Say.

Atomacera, Say, Bost. Jour. I, 1835, 212.

"*Wings.*—One marginal, not appendiculate, and three or four submarginal cells, the dividing nervure between first and second being obsolete" or sub-obsolete; third submarginal with the cross-nervures rather widely separated, the outer nervure nearly twice as long as the inner, an obtuse angle at the reception of the second recurrent nervure.

Antennæ 3-articulate, simple, ciliate in male.

Body short.

Tibiæ simple.

1. **A. debilis.**

Atomacera debilis, Say, Bost. Jour. I, 1835, 212, 1, ♂.

"Black; tibiæ whitish. Length 0.15 inch.

♂. Body black, polished; antennæ, ciliæ longer than the transverse diameter of the antennæ; mouth dull piceous; wings fuliginous, a little paler at tip; first and second cubital cellules confluent; tibiæ, anterior pair dull pale yellowish."

Indiana. Not seen.

Mr. Walsh writes, that he has taken one specimen in Illinois. The antennæ about three-fifths as long as body, the third joint of equal thickness to the middle, beyond which it tapers a little to the tip; the first submarginal cross-vein is distinct. He thinks *A. ruficollis* to be the ♀ of this.

2. **A. cellularis.**

Atomacera cellularis, Say, Bost. Jour. I, 1835, 213, 2, ♀.

Black; abdomen rufous. Length, less than one-fourth of an inch.

♀. Body black, polished; antennæ distinctly and rather densely ciliated with hairs, which are a little shorter than the transverse diameter of the antennæ; nasus, labrum and palpi whitish; wings dusky violaceous; cubital cellules three; the second very small, hardly one-third the length of the first, and but little wider at its tip than at its base; abdomen entirely yellow rufous; feet, coxæ, trochanters and base of the tibiæ whitish; anterior pair of tibiæ dull whitish.

Indiana.

3. **A. ruficollis.**

Atomacera ruficollis, Norton, Proc. Ent. Soc, Phil., 1864, 6, 7, ♀.

Black; the prothorax above, mesothorax and scutel rufous; wings sub-violaceous. Length 0.17. Br. wings 0.40 inch.

♀. Shining black, short and stout; antennæ black, short, thickly ciliate; second joint very short; third hardly clavate, but decreasing gradually in size to tip; the fourth and fifth joints of palpi flattened and enlarged, apical joints of equal length, but slender; basal third of antennæ above and beneath ferruginous; tegulæ, anterior angle, mesothorax and scutel yellow-red; legs black, their anterior tibiæ dull whitish before, their spurs short and sharp; wings ample, violaceous, sub-opaque, clearer toward apex, stigma large; four submarginal cells, second and third each receiving a recurrent nervure; lanceolate cell petiolate; under wings with two middle cells.

Penna.; Virginia, (Coll. Am. Ent. Soc.) Illinois, (B. D. Walsh.) Three females.

The abdomen is short and stout and pointed like *Nematus*.

b. Second and intersection of second and third submarginal cells each with a recurrent nervure.

18. **SCOBINA**, Lepel.

Hylotoma, † † † Lepel., Monogr. 1823, 48, 140.
Scobina, Lep. et Serville, Encyc. Meth. x. 1827.
Brullé, Hym. iv, 669.

Wings.—One marginal, not appendiculate, and four submarginal cells, the second and intersection of second and third each receiving a recurrent nervure.

Antennæ of females villose, clavate, sub-capitate.

Tibiæ simple.—Brullé. The four hinder tibiæ unispinose in the middle.—Lepel.

Country unknown.

Three submarginal cells.

19. **THEMOS.**

Hylotoma, *******, Klug, Jahrbuch,. 1834, 249.

Wings.—One marginal, not appendiculate and three submarginal cells, of which the first receives two recurrent nervures.

Tibiæ all simple.

1. **Themos hyaline**, n. sp.

Head and thorax ochraceous; abdomen black; wings violaceous opaque, at apex hyaline. Length 0.48. Br. wings 0.49 inch.

♂. Antennæ very short, not reaching scutel, clavate, villose with short brownish hair; color black, the two basal joints pale. Head nearly as wide as thorax, color of both ochraceous; tegulæ same color; metathorax and abdomen black, with bluish reflections; abdomen stout, wider in middle. Anterior legs ochraceous, the tibiæ black above, posterior legs purple. Wings ample, brownish violaceous, opaque, apex of upper pair abruptly and perfectly clear; first submarginal large, and receiving two recurrent nervures; lanceolate cell petiolate; under wings with two middle cells, the lower one diamond-shaped, small, its lanceolate cell small.

But one bulla in each of the submarginal cross-nervures, the outer one small and in the middle of the nervure.

Pennsylvania. One male.

This came from the Smithsonian Institute and is marked Pennsylvania, but is probably from Mexico or South America.

2. **T.** (**Hylotoma**) **Olfersii**, Klug, Jahrbuch., 1834, 249, 91, ♂. Brullé, Hym. iv, 669.—Brazil.

3. **T.** (**Hylotoma**) **surinamensis**, Klug, Berl. Mag. vi, 307, 38. B. b.; Jahrbuch., 249, 90.—Surinam.

E. Wings with one marginal cell appendiculate.
Three submarginal cells.

20. HYLOTOMA, ***** Klug.

Hylotoma, ***** Klug, Jahrbuch., 1834, 248, 88.

Wings, one marginal, appendiculate and three submarginal cells, of which the first receives two recurrent nervures.

Tibiæ all simple.

1. (**Hylotoma**) **formosa**, Klug, Jahrbuch., 1834, 248, 88, ♀.—Brazil.

21. HYLOTOMA, ****** Klug.

Hylotoma, ******, Klug, Jahrbuch., 1834, 248.

Wings, one marginal, appendiculate and three submarginal cells, of which the second receives two recurrent nervures.

Tibiæ all simple.

1. (**Hylotoma**) **leucocephala**, Klug, Jahrbuch., 1834, 248, 89, ♀.—Cayenne.

22. DIDYMIA, Lepel. et Serv.

Hylotoma, †††, Lepel., Monogr. 1823, 48.
Hylotoma, ****, Klug, Jahrbuch., 245.
Didymia, Lepel. et Serv. Encyc. Meth. 1827, x.; Brullé, Hym. iv, 668.
Gymnia, Lepel. MS.

Wings, one marginal, slenderly appendiculate and three submarginal cells, of which the first and second each receive a recurrent nervure; lanceolate cell contracted.

Antennæ 3-articulate; furcate in the males above the second article.

Tibiæ all simple.

Remainder as in *Hylotoma*.

1. **D. concinna.**

Hylotoma concinna, Klug, Jahrbuch., 1834, 246, 82, ♂. Pl. II, fig. 8.

"Antennæ longer than the abdomen, furcate, ciliate, pale; with the apex of abdomen and the hinder tarsi black; wings fuscous in the middle, fuscous hyaline."

"Somewhat larger than *H. plumigera;* pale yellow; head between antennæ shining brown; antennæ dark at tip; anterior legs wholly yellow; hinder legs yellow, with the tibiæ, spines and tarsi blackish; wings in the middle pale yellow, transparent; at base and tip blackish; nerves and stigma yellow.

Mexico. One male."

Not seen. In the colored plate this is figured with the head and apex of abdomen black, and the apical half of marginal cell and basal half of both pair of wings very dark.

2. **D. versicolor.**

Hylotoma versicolor, Klug, Jahrbuch., 1834, 246, 83, ♀.

"Luteous, with the vertex of head, back of thorax and apex of abdomen black; wings black, in the middle flavo-hyaline."

"Hardly as large as the *H. melanictera.* Head smooth and shining black, in front pale yellow; antennæ as long as to scutel, compressed, covered with fine hair, dusky, somewhat bent outward at the tips. Thorax above yellow; lobes distinctly separated, smooth and shining; middle of the middle lobe and the whole of the side lobes black; abdomen yellow, tip black; legs yellow; posterior tibiæ at tip and final joints of tarsi blackish; wings large, yellow, transparent; their base, a cross band before the middle and tips black; nerves and middle of stigma yellow, other nerves black."

Mexico. One female.

The antennæ of female much flattened at base of third joint, their basal half yellow; scutel and metathorax pale; marginal wing cell beyond the middle and all the apical cells obscure; one-fourth of the wing at base dark, with an oval, clear spot in the middle of first and second brachial cells; stigma pale, large, almost triangular. Lanceolate cell petiolate, small. There are three submarginal cells, of which the first is more than twice as long as the second; second quite short; appendiculate cell not slender.

The male has the antennæ furcate, formed like those of ♀, not so much compressed. Length 0.32. Br. wings 0.72 inch.

Cordova and Tampico; Mexico. One ♂, two ♀. (H. deSaussure.)

3. **D. fusca.**

Hylotoma fusca, Klug, Jahrbuch., 1834, 247, 87, ♂.

"Antennæ furcate, fuscous black; the wings obscure hyaline; costa and stigma yellow."

"Of the usual form and size. Head deep black, with furcate, finely ciliate antennæ; back of thorax black, anterior lobe at tip yellow; abdomen wholly black-brown; wings blackish transparent, with black nerves, yellow costa and stigma; legs yellow, femora, tibiæ at apex, and final joints of tarsi blackish.

Mexico. One male."

Not seen.

4. **D. (Hylotoma) elegans,** Klug, Jahrbuch., 1834, 247, 84, ♂ ♀.—Brazil.

5. **D. (Hylotoma) hirticornis,** Klug, Jahrbuch., 1834, 247, 86, ♀.—Brazil.

6. **D. (Hylotoma) lugubris,** Klug, Jahrbuch., 1834, 247, 85, ♀.—Brazil.

7. **D. (Hylotoma) Martini,** Lepel., Monogr. 1823, 48, 139, ♂. Klug, Jahrbucher, 246, 80.—Brazil.

Didymia Martini, Brullé, Hym. iv, 669, Pl. 47, fig. 8, ♂.—Brazil.

8. **D.** (**Hylotoma**) **melanictera,** Klug, Berl. Mag. vi, 1816, 309, 41; Jahrbucher, 245, 78.—Para.

9. **D.** (**Hylotoma**) **trigemina,** Klug, Berl. Mag. vi, 1816, 307, 39; Jahrb. 246, 81.—Brazil.

Wings with one marginal and four submarginal cells.

1. Second and third submarginals each with a recurrent nervure.
   Posterior tibiæ without side spur.

23. PTILIA, Lepel.

Ptilia, Lepel., Monogr. 1823, 49, k.
Westwood, Mod. Class., App. 52.
Hylotoma, **, Klug, Jahrbuch.
Hylotoma, A, Stephens.

Wings with one marginal, appendiculate, and four submarginal cells, of which the second and third each receive a recurrent nervure; the third produced and wider on its upper edge.

Antennæ 3-articulate, of females pilose, somewhat filiform, of males furcate.

Tibiæ all simple.

Lepel., in his original diagnosis, gives but three submarginal cells. Brullé in his synopsis confounds this with *Sericocera.*

1. **P. biramosa.**

Hylotoma biramosa, Klug, Jahrbuch., 1823, 242, 64, ♂.

"Antennæ furcate, black; thorax before and on each side white; abdomen luteous, with the sides black at base. Larger than *H. furcata.*"

"♂. Head black, with white hairs; antennæ bifurcate, the branches ciliate; corselet white, black in the middle, with white hairs; scutel and tegulæ black; legs brownish, thickly hairy; wings dusky, at the base clear, transparent; nervures and stigma black; two recurrent nervures touch the second submarginal cell, the second in the middle, and the first at the junction of the first and second cells; abdomen reddish-yellow, toward the base whitish; the second and third segments black at the sides."

"Mexico. One male."

A female from Mexico agrees with this description. The antennæ are like *Hylotoma,* compressed, ciliate within. Anterior angle white. Legs black, with the femora and tibiæ whitish before, pilose, all the spurs stout, rather obtuse; wings evenly violaceous, their basal fourth perfectly clear; the appendiculate cell is rather large; the first and second submarginals are of equal size, the second receiving both the recurrent nervures; the third much retracted below, about one-third as wide as above; lanceolate cell widely contracted, apparently petiolate; under wings not appendiculate, with two middle cells, the lower very small; lanceolate cell very small, with an interrupted cross-nervure in brachial cell above it. Length 0.36. Br. wings 0.96 inch.

2. **Ptilia filiformis,** n. sp.

Black; the anterior angle rufous, most of the legs white; antennæ long, filiform, ciliate; wings sub-hyaline. ♀. Length 0.28. Br. wings 0.72 inch. ♂. Length 0.24. Br. wings 0.54 inch.

♀. Shining black; antennæ as long as to base of abdomen, very slender, curled, gradually decreasing to tip, thickly ciliate; labrum hairy, palpi black, second joint white; head and thorax polished; an orange-colored spot on shoulders covering tegulæ, anterior angle and behind; legs black, the tips of coxæ, trochanters, four anterior femora at apex and tibiæ, except at tip, all of posterior femora and their tibiæ, except at tip, white; all the tarsi blackish; spurs rather obtuse, claws simple; wings violaceous, subhyaline, nerves, stigma and costa black; appendiculate cell very small; the first and second submarginals of equal length, third about two-thirds as wide below as above; the first recurrent nervure received in middle of second submarginal, and the second at junction of second and third; lanceolate cell widely contracted; under wings two middle cells; their lanceolate cell very small, with an imperfect cross-line above.

♂. The male has the third joint of antennæ bifurcate, very slender, ciliate, curled; the spot on anterior angle extends over one-half of pleura; abdomen slender.

Cordova, T. C. Mexico, (Coll. of H. deSaussure.)

The difference in the form of the antennæ is very marked, as well as the position of the recurrent nervures.

3. **P. brasiliensis,** Lepel., Monogr. 1823, 50, 143, ♀.—Brazil.
4. **P. (Hylotoma) ephippiata,** Klug, Jahrbuch., 1834, 242, 63, ♂.—Surinam.
5. **P. (Hylotoma) gonagra**, Klug., Jahrbuch., 1834, 241, 61, ♀.—South Brazil.
6. **P. (Hylotoma) ovalis,** Klug, Jahrbuch., 1834, 241, 62, ♀.—Montevideo.
7. **P. pubicornis.**
   Hylotoma pubicornis, Fab., Syst. Piez. 21, 5, ♀ ♀.
   Ptilia! pubicornis, Lepel., Monogr. 50, 144.—South America.
8. **P. (Hylotoma) plumicornis,** Klug, Jahrbuch. 1834, 241, 60, ♀.—Brazil.

Posterior tibiæ with a side spur.

24. HYLOTOMA.

Hylotoma, Latr., Nouv. dict. d'Hist. Nat. Fabr., Div. 2**, Pal. de Beauv, Leach, Lepel.†, Klug*, Hartig, Stephens, &c.
Arge, Schank.
Cryptus, Jurine, Hym. 1807, 49.
Tenthredo, Linn., Schank, Ames. &c.

Wings with one marginal, appendiculate, and four submarginal cells, somewhat equal, first shortest; second and third cells receiving a recurrent nervure; lanceolate cell contracted; under wings appendiculate, with two middle cells; stigma of upper wings large, distinct, semi-ovate within; submarginal bullæ, six, viz.: one near bottom of first transverse vein, one on submarginal vein just beyond the first recurrent nervure, sometimes but rarely actually at the point of reception, and two on each of the second and third transverse veins. In the dark-winged species a paler line connects these bullæ.

Antennæ 3-articulate; third article long, (composed of numerous soldered articles,) filiform and ciliate in males, shorter and rather clavate in males and nearly glabrous.

Head transverse, with a tubercle between antennæ; labrum transverse; mandibles without distinct teeth; (emarginate, Lepel.; bidentate, Stephens); joints of maxillary palpi lengthening regularly from base to apex.

Body rather short and stout, scutel large, sometimes prominent behind, produced to an obtuse angle, the post-scutel forming a lunate elevated ridge, the cenchri on each side white, lengthened, oval.

Legs simple, anterior tibial spurs not bifid, the four posterior tibiæ each with a spine on inner side below the middle; spurs rather sharp and covered with sparse coarse hairs; tarsi with small processes beneath; claws simple.

Larva 20-footed, (six pectoral, twelve pectoral, the last pair very small, and two caudal,) the base of the claws of the thoracic (pectoral) feet with a fleshy tubercle. (Hartig, pl. fig. 12—15.) The larvæ of *H. rosæ*, of Europe, are often seen with the extremity of the body elevated or curved into the form of the letter S. (Westwood Int. II, 99). The pupa is placed in a gauzy, double-enveloping cocoon.

The egg is greenish, oval, and is deposited under the surface of the leaf or in the ribs or tender stems.

They do not seem to appear in such numbers as to be injurious to vegetation, although not uncommon. Several species feeding upon the rose and sallow, have been described and figured by Hartig, Dahlbom, Klug, DeGeer, &c.

Table to assist in finding the North American species.

A. Color wholly black or blue blue-black	1, **McLeayi.**
B. Head black	2, **cœruleus.**
a. Thorax black.	
1. Abdomen partly black	3, **analis.** 4, **virescens.** 5, **clavicornis.**
2. Abdomen red or yellow	6, **abdominalis.**
b. Thorax partly black.	
1. Abdomen black	7, **scapularis.** 8, **dorsalis.**
2. Abdomen partly black	9, **humeralis.** 10, **procera.** 11, **poecila.** 12, **fascialis.** 13, **semifuscus.**
3. Abdomen red	14, **pectoralis.** 15, **dulciaria.** 16, **miniata.**
C. Head rufous.	
a. Thorax black.	
1. Abdomen partly black	17, **lepida.**
2. Abdomen red or yellow	18, **coccinea.** 19, **rubra.**
b. Thorax rufous.	
1. Abdomen red or yellow	20, **rubiginosa.**

1. **H. McLeayi.**

Hylotoma McLeayi, Leach, Zool. Misc. III, 1817, 122, 3, ♀.
Lepel., Monogr. 46, 129.
Norton, Proc. Ent. Soc. III, 5, 2.

♀. Antennæ black, at base and tip piceous; head, thorax and abdomen subæneous or blue-black; mandibles and palpi piceous; coxæ, femora and tips of posterior tibiæ black; knees, tibiæ and tarsi yellowish fuscous, apical tarsi blackish; wings smoky hyaline, stigma blackish, costa yellowish, a round fuscous spot beneath stigma.

Var. ♀. The fuscous spot below stigma prolonged, curving across the wing. Illinois, (B. D. Walsh).

♂. The male has the tips of tibiæ almost wholly pale. The fuscous spot below the stigma slightly flattened before. Insect smooth, shining, on the head and sides a fine whitish pile.

Georgia, (Leach); New England, New York, Pennsylvania, Virginia, Illinois, English River, Hudson's Bay Territory, (Smithsonian Institute).

Leach calls the wings "sub-fuscous, at apex hyaline," but the wings of most of those examined are clear hyaline, a little smoky, the apex not more clear than the middle. The second recurrent nervure touches the third submarginal cell near the middle in the females. In one male (Mass.) it is received near the third cross-nervure, and with another (Ill.) at the junction of the second and third cells. In all, the spot below the stigma is nearly round, extending nearly or quite across the second submarginal cell. The next species agrees with Leach better than this in the wings, but as this has come to be considered *H. McLeayi*, and is very common, while the other is rare, it seems better not to change the name, at least until more specimens of that are seen.

2. **H. cœruleus.**

Hylotoma cœruleus, Norton, Proc, Ent. Soc. Phil. III, 1864, 5, 3, ♀.

Blue-black, with violaceous wings, paler at tip. Length 0.32. Br. wings 0.70 inch.

♀. Color violaceous, shining; antennæ short, stout, black; palpi white, legs the color of body, their knees and anterior tibiæ dark piceous; wings smoky violaceous, clearer at tips; the whole of marginal cell fuscous; a round, darker spot below the stigma, covering most of first and second submarginal cells; nervures black; lower middle cell of under wings not more than half as long or large as the upper.

Pennsylvania, (Coll. Am. Ent. Soc.) One female.

3. **H. analis.**

Hylotoma analis, Leach, Zool. misc. III, 1817, 123, 5, ♂.
Lepel., Mon. Tenth. 47, 134.

"♂. Antennæ black, head and thorax blue-black; abdomen fulvous yellow, at the apex dark; legs black; wings sub-fuscous, at apex sub-hyaline.

Var. With the wings somewhat luteous.

Georgia. Length 4 lines. Br. wings 7 lines."

Not seen.

4. **H. virescens.**

Hylotoma virescens, Klug., Berl. Mag. vi, 1816, 296, 15, ♂; Jahrb., 231, 17.

"Aeneous black; abdomen yellow, at apex aeneous; wings with a fuscous spot. Length 3¾ lines. Br. wings 7 lines.

Wings of a yellowish color, the fuscous spot not fasciate; thorax wholly black, with a metallic reflection, faint through whitish hair; mandibles at the point brown; antennæ black; abdomen reddish-yellow, the three last segments black; femora and coxæ of the same color; tibiæ white, with brownish spines; the two first joints of tarsi are white, the two next brownish and the claws black; wings wholly shining hyaline; nerves brown, and a light brown spot extending beyond the second submarginal cell."

Georgia.

Not seen.

5. **H. clavicornis.**

Tenthredo clavicornis, Fab., Ent. Syst. II, 1793, 108, 14.
Hylotoma clavicornis, Fab., Syst. Piez. 24, 12.
Lepel., Mon. Tenth. 45, 125.

Head, thorax and base of legs blue-black; antennæ, abdomen, except tip, and legs yellowish; wings hyaline, with a spot below stigma. Length 0.36. Br. wings 0.74 inch.

♀. Antennæ yellowish, their first, second and base of third joint blackish; head and thorax blue-black, polished, with fine, sparse hair; labrum and mandibles ferruginous; palpi paler; abdomen yellowish, with the anal segments beneath black; legs above the knees blue-black; apical third of anterior femora before, tips of the four posterior femora and all the tibiæ and tarsi yellowish; apical tarsi fuscous. Wings hyaline, basal half slightly smoky; a fuscous semi-cylindrical spot below the stigma, (the flattened side toward the apex); second recurrent nervure received near the base of third submarginal cell.

Var. a. Abdomen entirely of one color. (White Mountains).

Var. b. Tergum in middle of segments and at base steel-blue; about the sutures ferruginous. (White Mountains).

Var. c. Head and thorax greenish-black. Tergum with blackish bands in middle. Legs wholly yellowish. (♂ ♀ Albany, N. Y.)

New England. English River, (Smithsonian Institute). New York, (Dr. Peck).

Only one, of many specimens examined, has the apical segments black above. Some have fuscous or black irregular spots on different parts of the abdomen.

6. **H. abdominalis.**

Hylotoma abdominalis, Leach, Zool. Misc. III, 1817, 123, ♀.
Lepel., Mon. Tenth. 45, 124, ♀.

Length 4—6 lines. Br. wings 8—10 lines.

"♀. Antennæ black; head and thorax blue-black; abdomen deep yellow; legs blue-black; tibiæ black; wings fuscous."

Georgia.

A male from Maine (Cambr. Mus.) resembles this. Wings tinged with violaceous; abdomen reddish-yellow. One of the wings is perfect; in the other the third submarginal cell has a supplementary cross-line, making five cells. The discoidal cell beneath it has also another cross-nervure, making four discoidal cells.

A single female from Connecticut differs only in having the apical half of wings hyaline, basal half fuscous, (not yellowish,) and a cylindrical darker spot beneath the stigma as in *H. McLeayi*. The antennæ are short as in that; the face covered with rather long whitish hair;

the second recurrent wing-nerve received upon the second submarginal cross-nervure. Klug thinks this identical with his *H. miniata.*

b. Thorax partly black.

1. Abdomen black.

7. **H. scapularis.**

Hylotoma scapularis, Klug, Berl. Mag. vi, 1814, 268, 19, ♂.
Jahrbucher, 231, 23.

Hylotoma calcanea, Say, Bost. Jour. 1, 211, 2.

Violaceous black; thorax reddish-yellow; wings violaceous. Length 0.45. Br. wings 0.94 inch.

♀. Antennæ black, extending as far as back of scutel, quite clavate, deeply channeled before, punctured and covered with short, reddish hair, the two basal articles enlarged and cup-shaped at apex, the first compressed in the middle. Head, breast, metathorax, abdomen and legs shining blue-black, (legs blackish,) and with rather sparse patches of whitish hair on thorax. The prothorax, mesothorax, scutel, (except its black posterior angle,) anterior angle, and a large spot on pleura, reddish or honey-yellow; the first three joints of the tarsi whitish, their tips black, (sometimes almost wholly black,) side spurs white, sometimes difficult to see, apical spurs short, sharp. Wings ample, blackish sub-fuscous, least obscure at apex, an indistinct darker spot below stigma; second recurrent nervure alike in both sexes, received half way between dividing nervure and middle of third submarginal cell; stigma and costa yellowish, nervures dark.

♂. The male has the antennæ longer and more slender, ciliæ beneath tawny. Scutel all yellowish; anterior tibiæ and all the tarsi whitish; wings not so dark, generally no spot below stigma.

Var. a. ♂. Thorax entirely blue-black, except the anterior angle; legs whitish before, below knees; a spot below stigma.

Var. b. ♂. Sides of metathorax and the pleura black, apical half of wings clear. (English River and Lake Saskatchewan). Penna.

New Hampshire, Connecticut, Pennsylvania, Maryland. Hudson's Bay Territory, English River, Lake Saskatchewan, (Smithsonian Institute).

Specimens from Mt. Washington, N. H. have the wings darker violaceous and the scutel mostly black. The rufous spot on the pleura is sometimes indistinct.

8. **H. dorsalis.**

Hylotoma dorsalis, Klug, Jahrbuch., 1834, 236, 44, ♀.

"Black, with the back of thorax red; breast and sides black; wings blackish, with black nervures and stigma."

Mexico. Probably the same as above.

2. Abdomen partly black.

9. **H. humeralis.**

Hylotoma humeralis, P. deBeauv., Ins. Afr. et Am. 1797, 99, p. ix, Hymen. fig. 6, ♂.
Lepel., Mon. Tenth. 47, 133.

Hylotoma sanguinea, Klug, Berl. Mag. vi, 299, 22; Jahrbuch., 231, 20, ♀.

Hylotoma scutellata, Say, Bost. Jour. I, 211, 1, ♀.

Color blue-black; scutel, pleura and abdomen, except at apex, coccineous; wings violaceous. Length 0.45. Br. wings 0.94 inch.

♀ ♂. Antennæ in both sexes as long as thorax, piceous, palest toward tip; second article as long as first, both slightly obliquely truncate above; head, thorax, apex of abdomen and legs shining blue-black; scutel, anterior angle, pleura and abdomen bright red, sometimes yellow-red; third joint of palpi swelled; side spines of tibiæ black; apical spines rather long; inner spine of anterior tibiæ blunt. Wings violaceous sub-opaque, usually darkest toward base; a large dark spot covering all of the marginal and the upper half of submarginal cells; under wing less obscure.

Var. a. Scutel blue. New York; Virginia.

Var. b. Scutel blue. Tergum mostly blue. Illinois, (Walsh).

New England, New York, Pennsylvania, District of Columbia, Kansas. Georgia, (Klug).

10. **H. procera.**

Hylotoma procera, Klug, Jahrbuch., 1834, 235, 38, ♀.

"Red, with the thorax before and legs blue-black; abdomen testaceous, anal segment blue-black. Length 6 lines.

♂. Antennæ black, almost as long as thorax; head shining blue-black; the back of thorax yellow-red, bordered with blue; wing-scales and legs deep blue; wings dusky brownish, transparent, with black nerves and stigma; abdomen reddish-yellow, the last ventral segment shining blue; body slender."

Mexico. Not seen.

11. **H. pœcila.**

Hylotoma pœcila, Klug, Jahrbuch., 1834, 239, 54, ♂.

"Testaceous; the head, spots on thorax, apex of abdomen, tibiæ and tarsi black; wings fuscous, in the middle hyaline." Length 0.28—0.32. Br. wings 0.60—0.68 inch.

"♂. Head and antennæ black, palpi yellow. On each side of scutel is a black spot; the four last segments of abdomen as well as the tarsi and hinder tibiæ are black; wings transparent in the middle, with yellow nerves; their base and tips blackish, with black nerves, (that is, they are blackish, with a clear band across the middle); costa toward the end and stigma yellow."

Mexico.

The antennæ are long, as long as to third segment of abdomen, setaceous, densely ciliate; second joint yellow; nasus and labrum emarginate, with a sharp ridge from edge of nasus to venter, dividing between antennæ, and enclosing lower ocellus in a long, deep basin; third joint of palpi short, globose, fourth enlarged at apex, the two black vittæ are on the side lobes of mesothorax; the spurs are pale, long and sharp, the inner spur of anterior tibiæ twice as long as the other, and sharp. Intermediate tibiæ and all the tarsi black. The wings are obscure black, with a yellowish hyaline band across their middle, edges distinctly marked; first submarginal cell short, and wider than long; second recurrent nervure received at or near intersection of second and third submarginal cell. The female resembles the male.

Cordova, Tampico, Mexico, T. C., Huastec, t. f. Mexico, (H. deSaussure.) (12 ♂, 2 ♀.)

This and the two following species and probably that preceding, are much more slender than the northern species.

12. **Hylotoma fascialis**, n. sp.

Testaceous, with most part of the head, two vittæ on thorax, and three apical segments of abdomen black; wings black, with a broad yellowish fascia in middle. Length 0.26. Br. wings 0.60 inch.

♀. Testaceous; antennæ as long as thorax, compressed, widest at base, curved, setaceous, ciliate, the two basal joints pale. Head black, the whole face around and beneath antennæ whitish; nasus and labrum emarginate; a sharp ridge from edge of nasus dividing between antennæ, and forming a deep basin, enclosing lower ocellus; two vittæ on the side lobes of metathorax and the three apical segments of abdomen black. Legs testaceous; apical two-thirds of hinder tibiæ piceous; apical joints of all the tarsi blackish; spurs pale, all long and sharp; inner anterior tibial spur nearly as long as first tarsal joint. Wings with a broad, yellow hyaline band across the middle of both pair; their basal fifth and about one-quarter of their apex blackish (including tip of stigma and all of third and fourth submarginal cells).

Mexico. One ♂. (H. deSaussure).

The abdomen is not very stout.

13. **Hylotoma semifuscus.**

Testaceous, with the head, three vittæ on thorax, most of tergum, and a spot on breast black; the wings yellow hyaline, their apical half black. Length 0.26. Br. wings 0.60 inch.

♂. Testaceous; antennæ as long as thorax, slender, sickle-shaped, ciliate; their two basal articles pale; nasus emarginate and ridged as in *H. procera*, the deep basin enclosing ocellus divided into two by a cross ridge below. Head black; about and beneath antennæ pale; a vitta on each lobe of mesothorax, the four apical segments of abdomen, obsolete spots on all the tergum, and a spot on the breast black. Legs yellow-white; coxæ at base, femora, except at tip, apical two-thirds of the tibiæ, and the four apical joints of tarsi black. Wings yellow hyaline; their apex from the middle of stigma across the wing black; second recurrent nervure received near the second submarginal crossnervure,

Mexico. One ♂, (Coll. of H. deSaussure).

Closely resembles *H. lepida*, Klug.

3. Abdomen rufous.

14. **H. pectoralis.**

Hylotoma pectoralis, Leach, Zool. Misc. III, 1817, 124, 10, ♀.
Lepel, Mon. Tenth. 47, 132, ♀.

"Antennæ black; head, breast and legs blue-black; thorax coccineo-luteus; abdomen luteus; wings luteus-hyaline. Length 4 lines. Br. wings 10 lines."

North America. Not seen.

15. **H. dulciaria.**

Hylotoma dulciaria, Say, Long's Second Exp. II, 1824, 314, ♀.

"Pale rufous; head, wings and feet violaceous black." Length 0.34—0.48. Br. wings 0.74—1.04 inch.

♀. Antennæ black, with a violaceous tinge; nasus emarginate, short; head, a spot on pectus and ovipositor sheaths blue-black, remainder of body testaceous or yellowish-red; legs steel-blue, spines same color, inner spines rather blunt. Wings violaceous, sub-hyaline, less obscure at apex, a large darker spot below stigma covering marginal and the upper half of all the submarginal cells. Under wings with but one middle cell.

Maine, N. Hampshire, Connecticut, New York. N. W. Ter., (Say.) Illinois; English River, (Smithsonian Institute).

This is probably the same with *H. pectoralis*, Leach, from which it differs only in the color of the wings and the black ovipositor sheaths, which Say calls the "tail black."

16. **H. miniata.**

Hylotoma miniata, Klug. Berl. Mag. vi, 1814, 298, 22, ♂; Jahrbuch., 231, 22.
Hylotoma scutellata, Lepel., Mon. Tenth. 47, 135. (Patria ignota.)

"Coccineus; head, three spots on the thorax and the legs black. Length 3½ lines. Br. wings 7 lines.

♂. The color of the body is a vermillion or cinnabar red. The head and antennæ are black; mandibles brown, with black teeth; a black spot on the thorax, extending over the middle and side lobes; a larger black spot on the breast. Abdomen entirely red; feet black; wings blackish; upper pair at the end pale and transparent, the nerves and stigma black. It conforms in size with *H. cærulascens* (of Europe)."

North America. Not seen.

The *H. scutellata* of Lepel. is thought by Klug to be identical with this. It seems to approach closely to *H. humeralis.*

C. Head rufous.

a. Thorax partly black.

1. Abdomen partly black.

17. **H. lepida.**

Hylotoma lepida, Klug, Jahrbuch., 1834, 239, 53; ♂.

Testaceous; spots on the thorax, apex of abdomen and the tarsi black; wings yellow hyaline, at apex fuscous.

♂. Antennæ black; the two basal joints and the head pale yellow; a long, black spot on each side of the scutel; the middle of the breast, the four last segments of the abdomen, the spines on tibiæ and the tarsi black; wings as far as the middle pale yellow with yellow nerves; toward the tip blackish, with black nerves; stigma in the middle black.

Mexico. One male.

This only differs from No. 13, *H. semifuscus*, in the color of the head and the number of vittæ on the thorax.

2. Abdomen rufous.

18. **H. coccinea.**

Hylotoma coccinea, Fab., Syst. Piez. 1807, 24, 11.

"Coccineus, with the antennæ exarticulate; antennæ and legs black; wings cyaneus.

Form and size of *H. enodis,* (of Europe). Antennæ thickened without, black. Head coccineus. Thorax coccineus, with the back black. Abdomen coccineus, immaculate. Wing obscure cyaneus, at the apex hyaline. Legs black."

Carolina. Not seen.

19. **H. rubra.**

Hylotoma rubra, Klug, Berl. Mag. vi, 1814. 299, 21, ♀; Jahrbucher, 231, 21.

"♀. Coccineus; a dorsal thoracic spot, the antennæ and feet black. Length 4¾ lines. Br. 9 lines.

The ground color of the body is cinnabar red; mandibles yellow-red, with black teeth; on the thorax a black spot covers most of the middle lobe and summits of the two side lobes; tegulæ black; the breast is without spots, the abdomen wholly red, the legs black, the wings brown running into blackish, with darker nerves and stigma."

New York. One female. Not seen.

As Klug remarks, this coincides with *Hyl. coccinea*, except that the wings of this are not "obscure cyaneus, at the apex hyaline."

β. Thorax and abdomen rufous or yellow.

20. **H. rubiginosa.**
Tenthredo rubiginosa, P. de Beauv., Ins. Afr. et Am. 1805, 98, Pl. ix, fig. v.
Hylotoma rubiginosa,, Klug, Berl. Mag. vi, 300, 27.
Lepel. Mon. Tenth. 47, 131, ♀.
Hylotoma erythrosoma, Leach, Zool. Misc. III, 124, 8, ♀.

"♀. The antennæ and four hinder legs blue-black; head, thorax, abdomen and two anterior legs reddish; wings black fuscous."

North America, (Beauv). Georgia, (Leach).

Antennæ violaceous black, reaching as far as scutel, truncate, finely punctured, second article one-fourth as long as first, smooth and shining; body smooth and shining; nasus white, not deeply emarginate, labrum and tips of mandibles black; head and whole body coccineus, scutel prominent, almost transparent red; legs blue-black, anterior pair tinged with rufous about the knees and tarsi, spines rather short, inner anterior one blunt. Wings brownish violaceous, almost hyaline at tip, very dark at base, a large fuscous spot covering marginal and upper half of submarginal cells; hinder wings marked in the same way; nerves, stigma, costa and scale almost blue-black.

New York. One ♀. (Coll. Mr. Calverley).

The *H. erythrosoma* of Leach has all the legs black.

South American species.

21. **H. americana**, Fab., Syst. Piez. 1804, 24, 14.
Lepel., Mon. Tenth. 49, 142?
Tenthredo americana, Fab., Ent. Syst. II, 109, 16.
Linn., Syst., Nat. II, 921, 9.
DeGeer. Ins. III, 599, 2, Tab. 30, fig. 21!
Hylotoma xanthothorax, Leach, Zool. Misc. III, 124, 9!—Surinam.

22. **H. basalis**, Klug, Jahrbuch., 1834, 237, 48, ♀.—Surinam.

23. **H. carbonaria**, Klug, Jahrbuch., 1834, 240, 58, ♀,—Surinam.

24. **H. collaris**, Klug, Jahrbuch., 1834, 236, 42, ♀.—Brazil.

25. **H. fulcrata**, Klug, Jahrbuch., 1834, 240, 57, ♂.—Brazil.

26. **H. geniculata**, Klug, Jahrbuch., 1834, 237, 45. ♀ ♂.—Brazil.

27. **H. helvola**, Klug, Jahrbuch., 1834, 238, 50, ♀.—Brazil.

28. **H. infuscata**, Klug, Jahrbuch., 1834, 236, 42, ♂.—Brazil.

29. **H. lurida**, Klug, Jahrbuch., 1834, 238, 49, ♀.—Surinam.

30. **H. maculipes**, Klug, Jahrbuch., 1834, 238, 52, ♀.—Brazil.

31. **H. melanaria,** Klug, Jahrbuch., 1834, 249, 59, ♄.—Brazil.

32. **H. melanopyga,** Klug, Jahrbuch., 1834, 237, 36, ♀.—Brazil.

33. **H. notata,** Klug, Jahrbuch., 1834, 237, 47, ♀.—Brazil.

34. **H. rubricollis,** Klug, Jahrbuch., 1834, 236, 40, ♀ ♄.—Brazil.

35. **H. stigmaticollis,** Klug, Jahrbuch., 1834, 236, 41, ♄.—St. Pauls, Brazil.

36. **H. terminalis,** Klug, Berl. Mag. vi, 1814, 297, 17; Jahrbuch. 236, 39.—Brazil.

37. **H. testacea,** Klug, Jahrbuch., 1834, 238, 51, ♀.—Brazil.

38. **H. ventralis,** Klug, Jahrbuch., 1834, 240, 56, ♀ ♄.—Brazil.

39. **H. xanthospila,** Klug, Jahrbuch., 1834, 239, 55, ♀ ♄.—Brazil.

2. Second submarginal cell with two recurrent nervures.

25. PACHYLOTA, Westwood.

Pachylota, Westw., Arcana. Ent. I, 1845, 24.

Wings with one marginal, appendiculate, and four submarginal cells, the second long and receiving two recurrent nervures; lanceolate cell closed; under wings not appendiculate, with two inner cells.

Antennæ a little compressed, angulate, third article arcuate at the base; maxillary palpi 4-jointed.

Legs thick, compressed; tarsi all dilated and short, except the first joint, and furnished with little processes beneath; tibiæ without apical spurs.

1. **P. Audouinii.**
Pachylota Audouinii, Westwood, Arc. Ent. I, 1845, 24, Pl. 7, fig. 3.—Africa.
Brullè, Hym. iv, 667, Pl. 47, 6, ♀.—South America.

Sub-family 3, TENTHREDINIDES, Lepel.

Antennæ from 9—15 articulate, generally setaceous, sometimes sub-moniliform or even enlarged toward the end; labrum apparent; saws of ovipositor with parallel sides.

F. Wings with one marginal cell.

Three submarginal cells.

The first and second submarginals each receiving a recurrent nervure.

26. CLADIUS, Ill.

Cladius, Illiger, Nam. der Ins. Mag. des Ins., 1801. Klug., Latr., Leach.
Hylotoma, Fab., Fam. 1.
Pteroma, Jurine, Nouv. Meth. Hym. 1807. Fam. 1.
Lophyrus, Latr., Gen. Ins. Paris, 1810.
Tenthredo, Panz., Fourc. Geoffr.

Wings with one marginal and three submarginal cells; the first and second each with a recurrent nervure; the first submarginal with an incomplete cross-line near the base; lanceolate cell contracted. Under wings two middle cells. Submarginal bullæ three, one quite long on submarginal vein at reception of first recurrent nervure, one at base of second, and a large one in middle of second transverse vein. The position of another, usually the first transverse vein, is indicated by a clear cross line.

Antennæ nine-articulate, setaceous, the two basal articles short and straight; the rest obliquely inserted and generally pectinate in males, on one side of several articles; in the females, simple, with both somewhat pilose.

Head transverse; mandibles with one inner tooth in the middle, below which are many little irregular teeth; maxillary palpi with the fourth joint short, inner maxillary lobe sharp.

Body short and stout.

Legs simple, with two tibial apical spurs; the inner one shortest on anterior pair; the tarsal claws have an inner tooth.

Larvæ twenty-footed, the fourth and eleventh segments without feet. The transformations of various European species have been noted. Curtis states that the larvæ of *Cladius difformis* remain on the under side of the leaves of the China rose, eating small holes through the leaves, and that they do not use the anal feet in walking. Dahlbom noted it on Salix viminalis. Hartig has noted the habits of several species, (*Cladius eucera*, on the Populus balsamifera and *C. albipes* on the cherry, &c.) He states that they form a double cocoon in the earth.

Section 1—*Cladius*, Hartig.

Antennæ of males with the lower half pectinate without; the inner lobe of maxillæ sharp, not membranous.

1. C. isomera.

Cladius isomera, Harris Cat. Norton, Bost. Proc. viii, 1861. 223, ♀.

Shining black, with whitish tibiæ and feet. Length 0.24. Br. wings 0.50 in.

♂. Antennæ black, pilose, with outer branches on the third, fourth, fifth and sixth articles, (very short on the sixth), a blunt process on the third within, and the apex of the other joints acute within; head polished; a sinus behind each of the two upper ocelli, and a basin enclosing the lower ocellus; a ridge is produced between the antennæ; body black, with outer half of palpi, the tips of knees, tibiæ and tarsi white; remainder of legs black; apical joints of tarsi and claws blackish; anterior tibial spurs sharp; claws with an inner tooth.

Wings violaceous hyaline, sometimes yellowish; stigma large, black; costa pale.

♀. The female has the third and fourth articles of antennæ enlarged at apex; basal articles tipped with coarse hairs resembling minute spines within.

Var. ♀. Wings hyaline, at base smoky.

Var. ♀. Basal two-thirds of all the wings black, sub-obscure; their apex hyaline. Norway, Me., (Camb. Mus.)

Mass., Ct., N. Y., Ill.

A number of specimens taken June 29th, at Farmington, Conn., on the leaves of the Clematis virginiana.

Section 2—(*Trichiocampus*), Hartig.

Antennæ of the males not branched, the third article dilated at base within, as in Section 1.

Europe.

Section 3—(*Priophorus*), Latr.

The third article of antennæ of males, simple, without process within; the inner lobe of maxillæ blunt.

Europe.

First submarginal wing cell with two recurrent nervures.

27. **PRISTIPHORA**, Latr.

Pristiphora, Latr. Nouv. Dict., 1816-19.
Lepel, Mon. Tenth, 59-†.
Westw. Ent. Ins. App.
Pteronus, Jurine, Fam. 3.

Wings—One marginal and three submarginal cells, the first submarginal large, and receiving two recurrent nesvures, second small and quadrate; lanceolate cell petiolate; under wings with two middle cells.

Antennæ nine articulate; the third, fourth and fifth of nearly equal length, simple, pubescent in the males, shorter and glabrous in the females. Mandibles slightly dentate. Remainder as in *Nematus*. Stephens remarks that this genus seems to occupy an intermediate space between *Cladius* and *Nematus*, nearly agreeing in the neuration of the wings with the former and in the form of the antennæ with the latter. In certain species of *Nematus*, the dividing nervure between the first and second submarginal cells is quite indistinct, and can only be seen by holding them up to the light. Mr. Walsh remarks that in five out of forty-nine females of his *P. grossulariæ* traces of a first submarginal cross vein could be discovered.

1. P. sycophanta.

Pristiphora sycophanta, Walsh, Proc. Ent. Soc., Phil., vi., 1866, 263, ♂. Length, ♂, 0.16 in. Br. wings 0.32 in.

"♂. Black. *Head* polished, but sparsely and rather coarsely punctate. Face with a lofty, but obtuse carina extending from between the antennæ to the clypeal suture. Clypeus squarely truncate. Labrum twice as wide as long. Mouth entirely black. *Antennæ* nearly as long as the body, black above, brown-black beneath, joints 3—5 sub-equal, 6—9 very slowly shorter and shorter. *Thorax* polished, with fine shallow punctures. Tegulæ and cenchri dull yellowish. *Abdomen* polished, with fine shallow punctures, sparse towards the base. *Legs* whitish; coxæ, except their extreme tips, femora, tarsal tips and in the hind legs the terminal one-eighth of the tibiæ and of theentire torsi, all black. *Wings* hyaline; veins black, costa and stigma dusky, first submarginal cross vein obsrlete, the ante-penultial cell receiving both veins in the normal manner.

Rock Island, Ill.

One ♂, Inquiline. Bred August 9, from a cocoon found July 27, inside the Cecidomyidous gall, Salix brassicoides, Walsh, of the same years growth. The following is probably the same species.

2. Pristiphora tibialis, n. sp.

Shining black, legs white, with black banded femora; wings hyaline. Length 0.22. Br. wings 0.46 in.

♀ Black. Antennæ black, about half the length of the body, third joint a little longer than fourth. Head closely punctured; channels at sides of ocelli almost obsolete; the ridge between antennæ channeled through the middle; nasus moderately notched; labrum piceous; tegulæ reddish-white. Legs white; basal two-thirds of coxæ, a wide band on the femora and apical third of posterior tibiæ black; tarsi blackish, basal joint white; tibial spurs all sharp, pilose; claws with a short inner tooth. Wings hyaline, nervures blackish, stigma full.

♂. Antennæ longer, slender; nasus hardly incurved, labrum white; the white and black on legs very clearly defined.

Ct. Md. (Mr. Uhler.) Pa. (Smith's Inst.) Va. and Ill. (Am. Ent. Soc.,) Phil.

The body is short and stout, as in *Selandria.* It seems most probable that this is identical with *P. sycophanta,* of Mr. Walsh, although differing in form of antennæ.

3. **Pristiphora relativus**, n. sp.

Black, legs whitish, with black banded femora, tarsi white, wings hyaline. Length, 0.18. Br. wings, 0.38 in.

♀. Color, shining black. Antennæ as in *P. tibialis.* Head coriaceous, without sensible depressions about ocelli; edge of nasus incurved. Tegulæ and legs whitish; coxæ and a wide band on femora black; tips of posterior tibiæ and their tarsi, except basal joint, fuscous. Wings hyaline, stigma and costa luteous, the latter pale at base; second submarginal cell contracted at junction with third cell.

Great Slave Lake, H. B. T. (R. Kennicott, Smiths. Inst.)

This is not as stout as the preceding species, but resembles it much.

4. **Pristiphora idiota**, n. sp.

Black; mouth and legs yellow-red; tips of hinder tibiæ and their tarsi black; wings hyaline. Length, 0.20. Br. wings, 0.52 in.

♂. Shining black. Antennæ long, compressed toward base; labrum and palpi pale; tegulæ reddish; abdomen slender; base of coxæ, tips of hinder femora and tibiæ and their tarsi black; tips of wings hyaline, stigma and costa greenish white.

Illinois. (Coll. Am. Ent. Soc.) 2 ♂.

5. **Pristiphora identidem**, n. sp.

Black; mouth, tegulæ and collar yellow-red; a rufous band on abdomen. Length 0.22. Br. wings 0.52 in.

♀. Black. Antennæ long and slender, somewhat like those of *Cladius.* Head and thoaax closely punctured, pleura polished; clypeus not incurved, labrum truncate; labrum and palpi white, tegulæ and collar reddish-white; a yellow-red band on the second, third and part of fourth segments of tergum, and all of venter, except apex. Legs mostly yellow-red; about the trochanters and all the tibiæ whitish; tips of the four anterior tibiæ, apex of posterior femora above, apical third of their tibiæ and the tarsi black. Wings hyaline; stigma piceous; costa greenish.

Illinois. (Coll. Am Ent. Soc.) Maine. (A. S. Packard, Jr.) 3 ♀.

It is very likely that this is the ♀ of *P. idiota.*

6. **P. grossulariæ.**

Pristiphora grossulariæ, Walsh, Pract. Ent. I, 1866, 123, ♀ ♂.

Length, ♀ 0.17—21. ♂ 17—18 in. Br. wings, ♀ 0.41—45. ♂ 35—38 in.

♀. "Shining black, with fine, rather sparse punctures. *Head* with the entire mouth, except the anterior edge of the labrum and the tip of the mandibles dull luteous. Labrum transverse and very pilose. Clypeus short, squarely truncate, immaculate. *Antennæ* two-thirds as long as the body, third joint three and a half times as long as wide, joint four fully one-quarter shorter than three, brown-black above, dull luteous beneath, except joints one and two, which are black, tipped below with luteous. *Thorax* with the wing scales honey-yellow, and the cenchri whitish. *Abdomen*, basal membrane whitish; ovipositor honey-yellow, its sheath black. *Legs* honey-yellow, or paler, with the six tarsal tips, and sometimes the extreme tips of hinder tibiæ and of the tarsal joints one-quarter pale dusky. *Wings* sub-hyaline; veins black; costa honey-yellow, stigma dusky, edged all round with honey-yellow, especially below.

♂. "Differs as follows:—The antennæ a little longer, and as usual, vertically more dilated, joint three being only two and a half times as long as wide. The coxæ, except their tips and the basal half of the femora are black; the extrême tip of the hinder tibiæ, and all but the extreme base of the tarsus dusk. Anal forceps honey-yellow."

Davenport, Iowa. (Walsh.) Me. (Packard.) N. Y. (Calverley.)

49 ♀. 4 ♂. (Walsh.) 2 ♀. (Norton.) Mr. Walsh bred these Sept. 2, twelve from larvæ found on the cultivated gooseberry. This is the *Pristiphora atripes* of my collection and MSS.

"*Larva*—A pale, grass-green worm, about half inch long, without any black dots on its body, and with a black head; after the last moult the head becoming principally green, with a lateral brown-black stripe commencing at the eye spot, and more or less distinctly confluent with the other one on the top of the head, where it is also more or less confluent with a large central brown-black spot on the face. When immature the larva has a darker dorsal line and a lateral yellowish line above the spiracles, the space below which line is darker than the back. Head black. Legs brown, except the sutures."

Mr. Walsh found these larvæ in great numbers on the gooseberry and currant, about the last of June and early in July, and the second brood in August, from which last he bred the above described imago. They strip the plants of the leaves, not gathering in numbers on any particular leaf, nor boring round holes through the leaves when young. The second brood spun their cocoons on the bushes on which they fed, and came forth August 26th, and during the last week in August. Doubtless their eggs are laid in the twigs of these same bushes, so that the larva in coming forth find their appropriate food close at hand.

4. Second submarginal cell with two recurrent nervures.

23. EUURA, Newman.

Euura, Newman, Ent. Mag., iv., 1837, 258.
Pristiphora, ††, Lepel, Mon. Tenth, 60.
Pristiphora, B, Stephens, Br. Ent. Mand. vii., 26.
Pteronus, Farm. 2, Jurine.
Cryptocampus, I. Hartig. Die Blattwespen.

Wings, one marginal, and three submarginal cells; the first small, rounded, second long, receiving two recurrent nervures; lanceolate cell contracted; under wings with two middle cells.

Antennæ nine-articulate, moderate, joints gradually decreasing in length and size from the third.

Head nearly as wide as thorax; mandibles slightly dentate.

From late studies of Mr. Walsh, this is subject to as great variations, and is as difficult of indentification at times, as species of the genus *Nematus.*

Mr. Walsh having bred many specimens from willow-galls, makes the following divisions in the genus:

1. GALL-MAKERS.

1. **E. orbitalis.**

Euura orbitalis, Norton, Proc. Ent. Soc., Phil., I, 1862, 144, ♀ ♂.
Euura genuina, Walsh, Proc. Ent. Soc., Phil., VI, 1866, 250, ♀ ♂.

Black; head and legs pale luteous, a black spot on vertex. Length, 0.12—16. Br. wings, 0.32.

♂ ♀. Shining black, polished. Antennæ moderate, slightly flattened, apical joints pale beneath; head pale luteous; a large black or brownish spot enclosing ocelli, and a dusky spot on summit, nasus deeply incurved; tegulæ and most part of the anterior angle, sides of apical segments, and in some cases, all the sides of venter, and the legs luteous, the trochanters paler; basal membrane visible, pale; tips of hinder tibiæ and of their tarsi brownish; wings hyaline, stigma pale at base.

Var. a. ♂. A male from Labrador has the whole body beneath pale.

Var. b. nigra. ♀. A female from Labrador has the whole head, except the mouth, black; the coxæ and femora, except at tip, black; the trochanters white.

Conn., N. Y., Ill., Labrador.

Mr. Walsh has named a species "genuina," which differs from the above in having the flagellum of the male entirely bright rufous beneath. As he does not seem to have seen the above species, I have thought best to consider it the same, especially as I have received specimens from several quarters, as taken on the willows. Mr. Walsh found his galls on the *Salix humilis.* "The lateral bud of a twig enlarged so as to be twice or thrice as long, wide and thick as the natural bud, before it begins to expand in the spring," otherwise externally unchanged. Internally "it contains early in the autumn a homogeneous grass-green fleshy matter, which is afterwards gradually consumed by the larva, leaving nothing at last but a mere shell, as thin as paper, and partly filled with excrement. The gall is monothalamus, sometimes one only on a twig; sometimes two or three, or more, at irregular intervals, rarely as many as three or four found out of three or four consecutive buds. Common, but not local. Described from thirty-four specimens. Length, .17—36 inch; breadth, .10—17 inch.

Larva.—The larva is twenty-footed, and on Oct. 2, is 13—19 inches long, of a greenish white color, the head tinged with dusky, and with the usual fuscous eye spots. Mouth dusky. At this date, few galls were already bored, and the other larvæ not long after this bored out and retired an inch or so under ground, where they spin a thin, whitish silken cocoon, to which many particles of earth adhere externally."

This statement is very interesting, as well as all the observations of Mr. Walsh on this subject, which the length of this paper will not admit of being reprinted in full.

E. s. ovum.

Euura s. ovum, Walsh, Proc. Ent. Soc., Phil., vi, 1866, 252.

♀. Length, .17—12 inch. Br. wings, .36—48 inch.

"♀. Shining honey-yellow. *Head* with the eyes, a square spot enclosing the ocelli, but separated from the eyes by a pretty wide orbit, and also the tips of the mandibles, all black. Clypeus emarginate in a circular arc of about 90°. Labrum rounded at tip. Occiput more or less clouded with black on the disk. Antennæ dull rufous above, with their basal half black, honey-yellow below, with the scape black, and more or less of the basal half of the flagellum dusky, three-fifths as long as the body, joints 3—5 subequal, 4 slightly the longest, 5—8 very slowly shorter and shorter, 9 full as long as 8. *Thorax* with an oblong spot on the anterior lobe of the mesonotum, generally extending from the collare two-thirds of the way to the hind angle of the lobe, rarely covering almost its entire surface, the interior half of each lateral lobe and sometimes its entire surface, base and tip of the scutel and rarely its entire surface, anterior disk of the metanotum, and the edges of the basal plate that border on the basal membrane, or rarely the entire surface of the basal plate, all black. Cenchri whitish. A more or less distinct black cloud on the pectus, and another on the posterior disk of the pleura, the former occasionally obsolete. *Abdomen* with that part of the anterior edge of joint one, that borders the whitish basal membrane, or rarely the basal half of joint one, black. Ovipositor honey-yellow, its sheaths dusky. Cerci full as long as the last tarsal joint of the legs, honey-yellow, lightly tipped with dusky. *Legs* honey-yellow, the tarsal claws dusky. *Wings* hyaline; veins black; those on the costa, as well as the basal half of the stigma, whitish or yellowish; the rest of the stigma dusky. Length ♀ .17—.22 inch; front wing ♀ .18—.24 inch.

"♂ Differs from the normal ♀ only as follows:—1*st*. The ground color is greenish-white, not honey-yellow. 2*nd*. The black spot enclosing the ocelli is larger, and is separated from the eyes only by a narrow orbit, and occasionally touches them for a small space 3*rd*. The occiput, except the orbit, is distinctly black. 4*th*. In the antennæ the pale colors are more dominant, and verge more or less on greenish-white; and the antennæ are three-fourths (not three-fifths) as long as the body. 5*th*. The thorax is black, except the tegulæ, the superior margin of the collare and the cenchri, which are all greenish-white. 6*th*. The abdomen is black above, greenish-white below, the lateral plates basally black, but terminally clouded with the pale color. Basal membrane white. 7*th*. The legs are greenish-white, sometimes, especially the hind legs, more or less honey-yellow. In the hind legs the base of the coxæ, the extreme tips of the femora and the tarsi are more or less fuscous. 8*th*. The veins on the costa are scarcely whitish, and only the extreme base of the stigma is whitish. Lengh ♂ .10—.17 inch; front wing ♂ .11—.19 inch.

"Ten ♂ . five ♀ , bred April 16—27. Absolutely undistinguishable by any reliable character from the inquilinous *Euura perturbans*, n. sp., u. v. Distinct at once from *E. s. gemma* and from *E. orbitalis*, Nort., by the abdomen ♀ being honey-yellow above and below, and by the abdomen ♂ having its lateral plates partly pale, and the venter entirely pale."

The gall is found on Salix cordata. An oval or roundish, sessile, monothalomous swelling, 0.30—0.50 inch long, placed lengthwise on the side of small twigs, green whenever it is smooth, but mostly covered with shallow longitudinal cracks and irregular rough scales, which are pale opaque-brown. Particular twigs on badly infested bushes sometimes have one of these galls on about every half inch of their length, and not placed in a regular row.

Larva.—August 30. Many 0.10—.12 inch long, imbedded in the slit at the base of the gall, in other galls not hatched. Larva pale yellowish, with a pale fuscous head and dark eye spots; removed from gall it uses its legs freely.

October 2. Many larvæ still in galls, from others they had bored out.

April 16—27. Fifteen imagos, all transformed in the gall, the galls gathered in March.

Mr. Walsh mentions another gall found on S. humilis, which he names *S. ovulum.* On this he found larvæ, but failed to obtain the imago. The gall is formed like the last, but the larvæ differ in color.

3. E. s. nodus.

Euura s. nodus, Walsh, Proc. Ent. Soc. Phil. vi, 1866, 253, ♂.

Length ♂ 0.16—0.17 inch. Br. wings 0.34—.36 inch.

"♂. Differs from *E. s. ovum* only as follows: 1st. The pale color is bright honey-yellow, not greenish-white throughout, i. e. both in antennæ, body and legs. 2d. The black spot enclosing the ocelli is larger and is confluent with the eye for its entire length, leaving no orbit between them. 3d. The venter (dried) is honey-yellow on the terminal third and fourth joints, and in the middle only of one or two more. Basal plates black as in *E. s. gemma.* When recent the venter was noted as being greenish and the legs as pale fulvous. 4th. The legs (dried) are honey-yellow immaculate, except the extreme tarsal tips. 5th. The basal half of the stgma is whitish as in *E. s. ovum* ♀.

Two ♂.

The gall is found on S. longifolia. A mere gradual enlargement of the twig, from one-fourth more than its normal diameter up to twice its normal diameter, almost always without any roughness on the external bark; general color that of twig.

August 28. When cut into, the interior of each gall is found to be pithy, and to contain 1—3 larvæ in separate cells. Frequently, on a piece of twig six inches long, two, three or four of these galls are placed at irregular intervals. Length 0.75—1.50 inch; diameter 0.10—0.25 inch. Described from thirty-one twigs. Very like the Cecidomyous gall *S. nodulus* on the same willow, but is much larger.

Larva.—August 28 the larva is 20-footed. Color pale greenish-white, with the mouth dark and the usual eye spots. Length about 0.15 inch.

April 2. One larva was cut out of a gall gathered the preceding August, showing that some larvæ undergo their transformation in the gall, and do not go into the pupa state until spring.

Div. 2.—INQUILINES or Guest-flies.

4. **E. perturbans.**

Euura perturbans, Walsh, Proc. Ent. Soc. Phil. vi, 1866, 254.

♀. Differs from the gall-making *E. s. ovum* ♀ only by the dorsum of the abdomen varying from honey-yellow, including the lateral plates, through obfuscated to deep black, with the lateral plates also black. The ♂ does not differ in any respect from *E. s. ovum* ♂.

Two ♂, five ♀. One ♂ bred April 7, from the Cecidomyidous gall *S. strobiloides,* O. S.

One ♂, two ♀, bred May 7—22, from the Cecidomyidous gall *S. batatas,* Walsh.

One ♀, bred May 16, from the Cecidomyidous gall *S. rhodoides,*

Two ♀, bred from an undescribed Cecidomyidous bud-gall Vitis fusus, Walsh, composed of bunches of 6--50 fusiform galls on the stem of the wild grape-vine.

Hartig divides his sub-genus *Cryptocampus* into two sections, of which the second, *Diphadnus*, resembles the above, except that it has but two submarginal cells, the first receiving the recurrent nervures.

Lanceolate cell petiolate;
Posterior tibiæ much flattened.

29. CRÆSUS, Leach.

Crœsus and *Nematus,* Div. 1, Leach.
Nematus, Sec. 2, I, Hartig, Die Blattw. 184.
Nematus, †††, Lepel. Mon. Tenth. 62.

Wings with one marginal and four submarginal cells; the second long, receiving two recurrent nervures; first and third small, lanceolate cell petiolate. Four submarginal bullæ, one in each of the transverse nervures, long one on the submarginal nervures, beginning at the first recurrent nervure; under wings two middle cells.

Legs.—The four anterior legs simple; the posterior pair rather stout, their tibiæ dilated at apex; the basal joint of tarsi longest, much dilated and flattened; remaining joints small and simple.

Larvæ attenuated behind, with six pectoral, twelve abdominal and two anal feet. Pupa enclosed in a cocoon in the earth.

The larvæ of *C. septentrionalis* has been observed in England feeding in great numbers on the hazel and willow. (Curtis I, 17.)

Remainder as in *Nematus*.

1. **C. latitarsus.**

Crœsus septentrionalis, Harris Cat.
Crœsus latitarsus, Norton, Proc. Ent. Soc. Phil. I, 1862, 199, ♀.

Color black, base of tibiæ white. Length 0.32. Br. wings 0.72 inch.

♀. Antennæ as long as body, black; body shining blue-black, a crescent-shaped elevation between antennæ; clypeus notched; labrum, mandibles and palpi piceous; mesothorax with confluent longitudinal punctures; pleura dull, with dense punctures; legs black, the anterior pair piceous toward tip; posterior trochanters and basal half of all the tibiæ white; posterior tibiæ enlarged and very much flattened toward the tip; first joint of tarsi still wider, compressed, longer than remaining four joints together, its edges elevated to a rim on both sides; wings hyaline, a little smoky below stigma; a dot in middle of both second and third submarginal cells.

Massachusetts, (Harris' Coll.) Pennsylvania, (Coll. Am. Ent. Soc.) (Smithsonian Institute.)

(Three ♀.) Quite rare. Wild cherry, Aug. 16.

Bred by Mr. Walsh from larvæ feeding on birch.

Lanceolate cell closed in middle.

30. LEPTOPUS, Hartig.

Leptopus, Hartig, Die Blattw. 1860, 184. *Nematus*, Sec. I.

Wings with one marginal and four submarginal cells, the second receiving two recurrent nervures; lanceolate cell closed in middle.

Remainder as in *Nematus*.

Europe.

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ERRATA et CORRIGENDA.

Page 5, line 33, *for* particular *read* particularly.
8, line 7, *for* so speak *read* so to speak.
8, line 13, *dele* comma *after* to.
13, line 28, *for* syrangaria *read* syringaria.
14, line 18, *for* Authros *read* Authors.
16, line 1, *insert a* semicolon *after* downwards.
26, line 15, *for* fluently *read* faintly.
26, line 21, *for* anterior *read* posterior.
27, line 13, *for* interal *read* internal.
50, line 19, *for* 171 *read* 179, 1.
50, line 21, *for* 671 *read* 674.
54, line 24 *for* Sel. *read* Serv.
63, line 23, *for* twelve pectoral *read* twelve abdominal.
64, line 3, **cœruleus** should be under heading *A* instead of *B*.
67, line 6, *for* 268 *read* 298.
69, line 3, *for* venter *read* vertex.
69, line 41, for *procera* read *poecila*.
71, to line 25 add the following references:—
  Klug, Berl. Mag. vi, 300, 26. Lepel., Mon. Tenth. 48, 136.
73, line 1, *for* 249 *read* 240.
73, line 34, for *Pteroma* read *Pteronus*.
76, line 15, *for* theentire torsi *read* the entire tarsi.
78, line 20, for *atripes* read *albipes*.
193, line 4, *for* Page 31 *read* Page 84.
204, line 3, *for* 0.22—.26 inch *read* 0.11—.13 inch.
224, lines 6 and 27, *for* Am. *read* Ann.
225, line 1, *for* piliform *read* filiform.
246, line 32, for *linutaris* read *limitaris*.
256, line 6, *for* s *read* is.
266, line 41, *for* 18 *read* ix.
286, line 7, *for* Plate IV *read* Plate V.
288, line 37, *for* 186 , *read* 1862.
325. line 23, *after* dark *insert* blue.
340, line 11, *for* clean *read* clear.
345, line 1, *for* lroea *read* lorea.
377, line 26, for *Lewisii* read *Lecontei*.